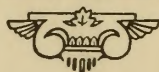


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THESIS

A STUDY IN THE REGULATION OF WORLD COMMODITIES

By

Fred Allen Wing
(A.B. Wesleyan University 1934)

submitted in partial fulfillment of
the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

1936





College of Business Administration
Berkeley University

1951

A report is the foundation of a good business plan.

By

James Allen Allen
(A. A. Allen, University of California)

Submitted in partial fulfillment of
the requirements for the degree of

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PART I

FOREWORD

On all sides today we hear of "plowing under crops," "restricting output," "controlling production," and paying farmers "not to raise" something. In many quarters these methods of benefiting some economic group are condemned and even ridiculed. Their critics seem amazed that such a foolhardy scheme was ever started in the first place, forgetting that were they in the same position, they would probably endorse the same plan or one similar in purpose. To those who chide Brazilians for restricting the output of coffee it should be pointed out that the first three attempts at controlling production were immensely successful, the second and third resulting in profits of 70% and 40% respectively on the capital invested. It was only natural that measures to "defend" the price of coffee permanently were entered upon with great optimism in 1922. In the same way British producers of rubber welcomed the Stevenson Plan in 1922 because they foresaw large profits in it for themselves. Likewise, the farmers in this country became tired of receiving only 50¢ a bushel for their wheat and thus acclaimed the A.A.A. with enthusiasm. And who can blame them? The industry or agricultural group that allows itself to be snowed under by an ever-increasing surplus is certainly improvident and short-sighted.

On all sides today we hear of "floating under-
 crops," "restricting output," "controlling production,"
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 quarters these methods of benefiting some economic group
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 amazed that such a foolhardy scheme was ever started in
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 British producers of rubber welcomed the Malayan plan
 in 1922 because they foresaw large profits in it for
 themselves. Likewise, the farmers in this country be-
 came tired of receiving only 30% a bushel for wheat
 wheat and thus acquiesced the A.A.A. with enthusiasm. And
 who can blame them? The industry or agricultural group
 that allows itself to be shoved under by an over-inflated
 big business is certainly imprudent and short-sighted.

From the social point of view this is possibly a narrow way of looking at it, yet one should examine each plan thoroughly and impartially before passing final judgment on it, because in many cases what is advantageous to one economic group reacts in the long run to the benefit of other groups.

In selecting coffee, rubber, and tin as commodities to be studied, I do not propose to set them up as necessarily typical of regulated commodities. The primary reason for choosing them is that they are all important. It is necessary to note that this thesis is essentially an examination of the regulation of specific products rather than a consideration of all regulation in general. Where the regulatory measures show elements in common, I have attempted to direct attention to them and where certain features point towards the possible outcome of future restriction plans, I have tried to demonstrate their application, but only on the basis of the three commodities concerned.

Method of approach.

In building up the background for each raw material the procedure has been to indicate the countries or interests most concerned in its production, trace the history of the production of it, and show the course of prices and market conditions. Then early con-

trol plans have been scrutinized--followed by a review of those now or lately in operation. In conclusion a summary has been made of the social ineffectiveness of control schemes and the obstacles presenting themselves to their present and future operation.

Before concluding I wish to make grateful acknowledgment to Professor Max Hartmann of the Boston University College of Business Administration for his invaluable advice and criticism during the writing of this thesis.

The problem of surpluses.

It is difficult to find a war material in which the problem of a temporary unnecessary supply has not been encountered at some time in the history of its production. It is important to note, however, that surplus articles of food such as wheat and meat have faced a surplus only in restricted areas of the world. In countries like China, Japan, and Italy there is usually an actual scarcity rather than surplus stocks have been found most prevalent in the raw material group such as silk, and rubber, and among semi-staple crops such as coffee.

In the matter of surpluses of agricultural products such as rubber and coffee some economists like Tienzenko¹ attribute the cause to mismanagement in the

1. Tienzenko, Vladimir--World Agriculture and the Depression, Michigan Business Review, p. 27.

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INTRODUCTION

World commodity defined.

"World commodity" is a term which is perhaps liable to be misinterpreted. To be classed as a world commodity an article must be one which is consumed on a large scale in parts of the world usually distant from the region where it is produced or is consumed in regions in addition to that in which it is produced. The commodity is essentially one which enters into ocean commerce and is transported from one continent to another.

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1. Timoshenko, Vladimir--World Agriculture and the Depression, Michigan Business Studies, p. 569.

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The problem of supplies.

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1. Timoshenko, Vladimir--World Agriculture and the Depression, Michigan Business Studies, p. 566.

production and consumption of the commodity itself, while other authorities, such as Copeland,² claim that they were caused by "economic factors so universal in scope and of such force that they largely outweighed the special conditions influencing the price of each commodity." Whatever the underlying causes, there is no dispute over the facts of the situation itself. They are familiar to everyone. Production had outrun consumption so far that by 1930 world stocks³ had piled up to the extent of 29,000 tons of tin, 28,509,000 bags of coffee, and 365,000 tons of crude rubber.

These surpluses hanging over the market act as a depressing influence on prices because buyers refrain from buying if they believe additional supplies will be thrust on to the market at some future date. The price of tin in New York was pushed down to 18¢ per pound in 1933,⁴ rubber to less than 5¢ per pound in 1931,⁵ and coffee to 6.1¢ per pound in 1931.⁶

Significance of the problem of surpluses.

Maladjustments between supply and demand have their repercussions throughout the world. An understanding that the problem of surpluses is not only a national

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2. Copeland, Melvin--Raw Material Prices and Business Conditions, Harvard Univ., Grad. School of Bus. Admin.p.45.
 3. Ibid--pp. 5, 11, 25, 28
 4. Business Week--Nov. 11, 1933.
 5. Copeland, Melvin--Raw Material Prices and Business Conditions, pp. 4, 26, 28.
 6. Ibid.

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These surpluses hanging over the market act as a depressing influence on prices because buyers refrain from buying if they believe additional supplies will be thrown on the market at some future date. The price of tin in New York was pushed down to 144 per pound in 1933,³ rubber to less than 32 per pound in 1931,⁴ and coffee to 8.14 per pound in 1931.⁵

Significance of the problem of surpluses.

Relationships between supply and demand have their repercussions throughout the world. An understanding that the problem of surpluses is not only a national

2. Copeland, *Winds of War: Material Forces and Business Conditions*, Harvard Univ. Grad. School of Bus. Admin. p. 46.
 3. *Ibid.* pp. 8, 11, 24, 26.
 4. *Business Week*—Nov. 11, 1933.
 5. Copeland, *Winds of War: Material Forces and Business Conditions*, pp. 4, 24, 26.
 6. *Ibid.*

but international one is vital if the world is ever to make progress towards preventing the conditions that cause world depressions. That the oversupply of wheat was considered at the London Economic Conference in 1933 is encouraging, not so much from actual results accomplished, but on account of the fact that the problem is receiving more attention each year. To be sure, the control of production exactly in accordance with demand is an achievement beyond the power of mortal man, but to gauge it more accurately than it has been done in the past is certainly possible of achievement.

A word or two should be enough to illustrate the mutual dependence that one country has on another. When the purchasing power for British and American goods of the people of Brazil is seriously cut by a drastic decline in the price of coffee, the ability of the British and Americans to sell their manufactured goods in South America is lessened and industries producing those goods are correspondingly depressed. Likewise, a surplus of rubber in the Middle East results in a decrease of the power of that region to purchase from other countries manufactured articles to be used in developing their raw material resources.

Adverse affects on world trade are not the most important reasons for studying the problem of surpluses. When we focus our attention on the producing country

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alone, it is plain that capital invested in unnecessary coffee or rubber plantations, or tin mines represents a social waste. By "unnecessary" productive capacity I mean capacity for which no long-time permanent demand exists. Most any plantation may produce temporarily in excess of current consumption,--then, when stocks begin moving again this production is absorbed.

Likewise, labor expended in producing commodities for which no profitable market exists is a social loss because it rightfully should be employed in more socially profitable enterprise. The portion of total cost represented by labor in the burning of \$70,000 worth of coffee daily in Brazil towards the end of the summer of 1931, if diverted into the cultivation of beans and corn, would at least have raised the standard of living of Brazilian laborers slightly even though such crops do not enter into international trade.

Review work done by others in this field.

Perhaps the most exhaustive study in the regulation of world commodities is that conducted by Benjamin B. Wallace and Lynn R. Edminster under the supervision of the Brookings Institution of Washington, D. C. In their book "International Control of Raw Materials," written in 1930, they review control measures in sodium nitrate, camphor, potash, coffee, rubber, and pulpwood.

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They consider at length how consumer relief from undue elevation of prices may be obtained and survey the attitude that is developed in consuming countries towards governments which permit price-raising by restrictive measures.

Other works of value are "Foreign Combines to Control the Prices of Raw Materials," by Herbert Hoover, written as Secretary of Commerce in 1926 and published as a Trade Bulletin by the United States Department of Commerce; "Artificial Control Schemes and the World's Staples" by J.W.F. Rowe, published in Index, April, 1935; Government Control of Crude Rubber, a book by Charles R. Whittlesey, written in 1931; and "Raw Material Prices and Business Conditions," a study by Melvin T. Copeland, made in May 1933, and published by the Graduate School of Business Administration, of Harvard University.

Purpose of this study.

Before being condemned or praised, the restrictive plan for each commodity must plainly be considered on its merits. Yet after all facts are considered, the adverse effects of control schemes on consumers and on our economic society seem to outweigh their beneficial influences. The purpose of this study is to bring together such obstacles as must inevitably present themselves to the smooth operation of restrictive agreements

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Currencies" by J. H. Dowe, published in Index, April, 1935;
Government Control of Trade Routes, a book by Charles H.
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and with these in mind point out that the chances of failure bulk larger than the prospects of success.

Brief survey of methods used in the past to regulate prices and output of a product.

Adam Smith in his Wealth of Nations written in 1776 said, "People of the same trade hardly meet together even for merriment or diversion but the conversation ends in a conspiracy against the public or in some contrivance to raise prices." What was true 160 years ago is true to-day and probably will be true for a long time in the future.

Early attempts at controlling output on a much smaller scale than those we are concerned with doubtless can be found in the economic history of every nation. The object has invariably been the same,--to maintain or raise prices by achieving artificial scarcity. The measures employed in the United States are cited here, not because they are any more important than similar devices in foreign countries but because they are closer at hand.

The most subtle methods were simple unwritten agreements regarding prices. Well-known in this respect are the "Gary dinners" of steel manufacturers, at which the members of the industry met to talk over trade conditions. "Here there was no understanding reached to maintain prices, but the general effect was that prices were maintained."⁷ Another example is the Cordage Manufacturer's Association

7. Curtis, Roy Emerson--Trusts and Economic Control
M'c Graw - Hill, 1931--New York--p.25

and with these in mind, one can see the danger of fall-
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Brief survey of methods used in the past to estimate prices
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Another example is the *Domestic Manufacturers' Association*

which had no constitution or by-laws, nor any officers except a secretary. Here a member simply stated that he was planning to raise prices and the others could follow or not. No one had to agree to anything.

More definite were the pooling agreements which followed and became common in the 1870's. Here there were three main types: (1) output or traffic pools, (2) territory or market pools, and (3) income pools. They functioned as their titles imply. There were usually written articles stating the obligations of the various members. The most common type of pool was the "output" pool in which the participants agreed to restrict production to a certain percentage of capacity. Pools did not become a permanent form of control because not only did members themselves often exceed their production quotas but the agreements were held in individual states as violations of the common law prohibiting restraint of trade.

After the collapse of pooling agreements, we find the beginning of trusts and the increasing size of corporations. Since these are specific business forms rather than purely control devices, they are not within our province to consider.

An important development in control plans involving pooling agreements on an international scale, came with the organization of Copper Exporters Inc. in

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An important development in control plans involving pooling agreements on an international scale, came with the organization of Copper Exporters Inc. in

1926 under the Webb-Pomerene Law of the United States. This organization is very similar to the international cartels of Europe. Its members include the major copper producers of North and South America, the British Metals Corporation, and Belgian and German companies. The companies in this group control 90% of the world output of copper. "An international committee representing the Copper Exporters and its associates regularly sets a price c.i.f. Hamburg. Such a policy requires pooling and limitation of exports which are in turn dependent upon production "restriction agreements."⁸

Adoption of control principle by governments.

The most ambitious control plans, however, are those instituted or sanctioned by the governments of certain countries having a partial or complete monopoly of commodities essential to the rest of the world. Familiar among these are those involving the production of rubber, coffee, and tin.

It is difficult to trace the steps that mark the increase of government intervention in control measures. The progress of governments regulating potash nitrate, and coffee has been steadily upward, whereas in the case of sisal, silk, rubber, and Egyptian cotton,

8. Quarterly Journal of Economics - Nov. 1931 - The Copper Industry and the Tariff, Robert Pettengill, p. 145.

1932 under the Webb-Pomeroy law of the United States. This organization is very similar to the International Cartels of Europe. The members include the major copper producers of North and South America, the British Metals Corporation, and Belgian and German companies. The companies in this group control 80% of the world output of copper. An international committee representing the Copper Exporters and its associates regularly sets a price c.i.f. Hamburg. Such a policy requires pooling and limitation of exports which are in turn dependent upon production restriction agreements.

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government control was instituted at the onset of the plan.⁹ In general the tendency has been towards increasing complexity of control plans and expansion of them beyond the bounds of a single government.

"Up to the close of the seventeenth century the world's entire, although limited, supply of coffee was obtained from the province of Yemen in south Arabia, where the true celebrated Mocha or Mokka coffee is still produced. At this time, however, plants were successfully introduced from Arabia to Java, where the cultivation was immediately taken up. The government of Java distributed plants to various places, including the Dutch garden of Amsterdam. The Portuguese introduced coffee into Brazil. From Amsterdam the Dutch sent the plant to Surinam in 1713, and in the same year Jamaica received it through the governor Sir Nicholas Lucas. Within a few years coffee reached the other West India islands, and spread generally through the tropics of the New World, where now produce by far the greater portion of the world's supply."

Before the latter part of the nineteenth century Brazil did not seem to possess advantages for coffee-cultivation of soil and climate. But soon coffee-

1. Encyclopaedia Britannica, Eleventh Edition, vol. VI, p. 847.

9. Wallace and Edminster-International Control of Raw Materials, Brookings Institution 1930, p. 11.

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PART II

Coffee--An early example of regulation of a world commodity

History of the coffee industry.

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1. Encyclopaedia Brittanica, Eleventh Edition, vol. VI, p. 647.

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Surinam in 1715, and in the same year Jamaica received
it through the governor Sir Nicholas Lawes. Within a
few years coffee reached the other West Indian islands,
and spread generally through the tropics of the New World,
which now produce by far the greater portion of the
world's supply."

Before the latter part of the nineteenth cen-
tury Brazil did not seem to possess any special advan-
tages for coffee-
and conditions of soil and climate. But soon coffee-

growing reached such a tremendous scale that there was little room to raise other crops and many had to be imported.² The coffee growing area of Brazil is centered in the state of Sao Paulo and covers about 1, 158,000 square miles. Coffee is a crop which is harvested in largest quantities in August, September and October. The crop year begins July 1st and ends June 30th of the next year.

Consumers who prefer strong blends are a distinct advantage to Brazil. Most of her coffee is strong while that grown in other countries is mild. Since U.S. drinkers prefer strong blends, this country still obtains almost two-thirds of its supplies from Brazil. Consumers do not quickly shift from one brand to another, hence Brazil's position still seems secure in this respect as far as the United States goes. However, as regards that portion of this country's consumption which is represented by new coffee drinkers, each year has seen an increase in the buying of mild brands, especially those of Colombia, rather than the purchasing of Brazilian grades.

2. Wallace and Deminster, International Control of Raw Materials, p. 123.

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Ownership of capital invested in coffee plantations.

Most of the capital invested in coffee plantations is contributed by Brazilians. The following table, taken from the census of 1925 of the State of Sao Paulo, shows the large percentage of native producers. Since over $\frac{1}{2}$ of the total Brazilian coffee crop is produced in Sao Paulo, it is safe to consider these figures as representative of the entire industry.

Nationality of Sao Paulo Coffee Producers

Nationality	Number of Properties	Number of trees planted	Nationality	Number of properties	Number of trees planted
Brazilian	25,566	716,118,865	British		16,620,000
Italian	11,632	166,171,228	Austrian	164	2,967,343
Portuguese	1,521	33,629,891	Various	438	15,451,663
German	617	20,771,404			
Spanish	1,151	17,804,061	Total		989,534,455

Source: U.S. Dept. of Commerce, Trade Promotion Series No. 92, 1930, "The Coffee Industry in Brazil", p. 30.

Ownership of capital invested in coffee plantations

Most of the capital invested in coffee plantations is contributed by Brazilians. The following table, taken from the census of 1925 of the State of São Paulo, shows the large percentage of native producers. Since over $\frac{1}{2}$ of the total Brazilian coffee crop is produced in São Paulo, it is safe to consider these figures as representative of the entire industry.

Nationality of São Paulo Coffee Producers

Nationality	Number of Producers of trees planted	Number of Properties of trees planted	Nationality	Number of Properties of trees planted
Brazilian	26,366	116,116,863	British	16,280,000
Italian	11,638	100,111,102	Austrian	1,957,343
Portuguese	1,631	25,829,601	Various	12,461,663
German	617	20,771,406		
Spanish	2,151	17,306,081	Total	939,354,486

Source: U.S. Dept. of Commerce, Trade Promotion Series No. 52, 1930, "The Coffee Industry in Brazil," p. 30.

Peculiarities of coffee-growing.

Predominance of coffee cultivation in an area results in overdependence on it. Brazil is characteristically a one-crop region, although other crops such as corn, rice, beans, and fruit were once grown there. The profitableness of coffee-growing has been both a source of strength and weakness. A normal or scarce crop, assuming no carry-over from the previous year, results in profitable world prices and correspondingly good returns to growers. An excessively large crop depresses world prices to disastrous levels or causes the piling up of stocks which hinder price rises in subsequent years. If wider diversification of crops existed, the losses on coffee might be absorbed by favorable prices for the other crops.

The only way Brazil can pay her foreign creditors is in goods or in gold. In late years she has had to pay heavy service charges on her foreign debt. A premium on foreign currencies results when coffee reaches an unduly low price because the monetary value of exports is so seriously cut. Then gold must leave the country and internal financial collapse with its political repercussions follows. Hence, the dependence of Brazil on the price of coffee is much more than an economic problem.

The coffee tree is an example of a perennial

Specialization of coffee-growing

Predominance of coffee cultivation in an area results in overdependence on it. Brazil is characterized typically a one-crop region, although other crops such as corn, rice, beans, and fruit were once grown there. The profitability of coffee-growing has been with a source of strength and weakness. A normal or average crop, assuming no carry-over from the previous year, results in profitable world prices and correspondingly good returns to growers. An unusually large crop depresses world prices to disastrous levels or causes the falling up of stocks which hasten price rises in subsequent years. It wider diversification of crops existed, the losses on coffee might be absorbed by favorable prices for the other crops.

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which doesn't begin to pay for itself from the berries produced until it is four to seven years old. This point is significant in considering the apparent inability of the coffee supply to adjust itself to demand. The trees are planted during a period when prices are attractive. After 4-7 years they come into bearing, perhaps when prices have slumped. Since the output of a coffee tree cannot be controlled like the output of a factory or even like the production of latex by rubber trees, the coffee crop must be harvested when the berries are ripe. If there were an excessive number of trees planted six years back, the market is flooded with coffee unsaleable at a profit-allowing price. Elizabeth Gilboy of the Harvard Committee on Social Research has studied the history of coffee and has shown that we can expect a production cycle of 8 to 14 years in length.³ The basis of it is this 4-7 year period which the coffee tree requires to come to maturity.

History of prices and production.

Besides Brazil coffee production is carried on extensively in Colombia, Java, and Central America. The production of Brazil, however, is by a wide margin the largest of the four countries. Other regions of lesser importance are British India, Haiti, Mexico, and

³. Quarterly Journal of Economics, August 1934, pp. 675-678.

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History of prices and production.

Besides Brazil coffee production is carried
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the largest of the four countries. Other regions of
least importance are Dutch India, Haiti, Mexico, and

Venezuela. "During the period 1909-1913, Brazil furnished about 73% of the world's supply of coffee. After that the percentage fell somewhat until in 1925 it was 68%. This loss was a proportionate and not a numerical one as Brazil's total exports had increased by over 200,000,000 pounds in 1925. Her loss in relative importance was due largely to the increase in the trade of Colombia, whose exports of coffee have almost trebled during the period. During 1923-25, Brazil furnished about 70% of the world's coffee." ⁴ After 1925 Brazil's statistical position in the world coffee trade declined as is evidenced by the fact that from 1925 through 1929 she furnished ⁵ approximately 65.5% of the world's supply of coffee.

In tracing the history of prices and production, Miss Gilboy has outlined a 8-14 year production cycle ⁶ and has shown how regulation arose out of it. "In 1874 a year of high prices, large investments were made in coffee plantations in Sao Paulo. By 1879 a new crop had begun to flood the market and prices began a steady downswing, terminating in the low prices of 1883-86. From 1879 to 1887 overproduction existed with resulting accumulation of stocks of coffee and drop in prices. The early

4. Pratt, Edward E., International Trade in Staple Commodities, p. 350.

5. Wallace, and Edminster, International Control of Raw Materials, p. 166, table taken from Le Cafe.

6. Quarterly Journal of Economics, August 1934, pp. 675-678.

Venezuela. During the period 1903-1913, Brazil furnished about 75% of the world's supply of coffee. After that the percentage fell somewhat until in 1933 it was 58%. This loss was a proportionate and not a numerical one as Brazil's total exports had increased by over 300,000,000 pounds in 1933. Her loss in relative importance was due largely to the increase in the trade of Colombia, whose exports of coffee have almost tripled during the period. During 1933-35, Brazil furnished about 70% of the world's coffee. After 1935 Brazil's statistical position in the world coffee trade declined as is evidenced by the fact that from 1935 through 1938 she furnished approximately 65% of the world's supply of coffee. In tracing the history of prices and production, also Gilroy has outlined a 8-14 year production cycle and has shown how regulation arose out of it. In 1874 a year of high prices, large investments were made in coffee plantations in Sao Paulo. By 1879 a new crop had begun to flood the market and prices began a steady downward, continuing in the low prices of 1883-85. From 1879 to 1887 overproduction existed with resulting accumulation of stocks of coffee and drop in prices. The early

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4. Brazil - Annual E. International Trade in Brazil Commodity, p. 250.
 5. Wilcox, and Edmister, International Control of Raw Materials, p. 156, table taken from La Cafe.
 6. Quarterly Journal of Economics, August 1934, pp. 375-376.

90's were again a period of high prices. Surplus stocks were disposed of and new planting began again, with the inevitable result of overproduction and fall in prices from 1897-1900. Owing to a simultaneous fall in the exchange rate, which is dominated by the coffee industry, Brazilian planters did not feel the effects of overproduction until 1900 and had continued with new plantings.

"The bumper crop of 1901-1902 prolonged the coffee crisis and led to the first attempts at artificial control of the industry. Planting was for a time forbidden but during the price rise of 1911-19, new planting started up again. After 1918, the situation grew so bad that in 1924, artificial control was entered upon as a permanent policy.

"Each attempt at artificial control, beginning in 1883-84 with attempt of Brazilian government to finance market operations and ending with federal control in 1931 has met with the same problem. Stocks must be stored for some years before the market can absorb them.

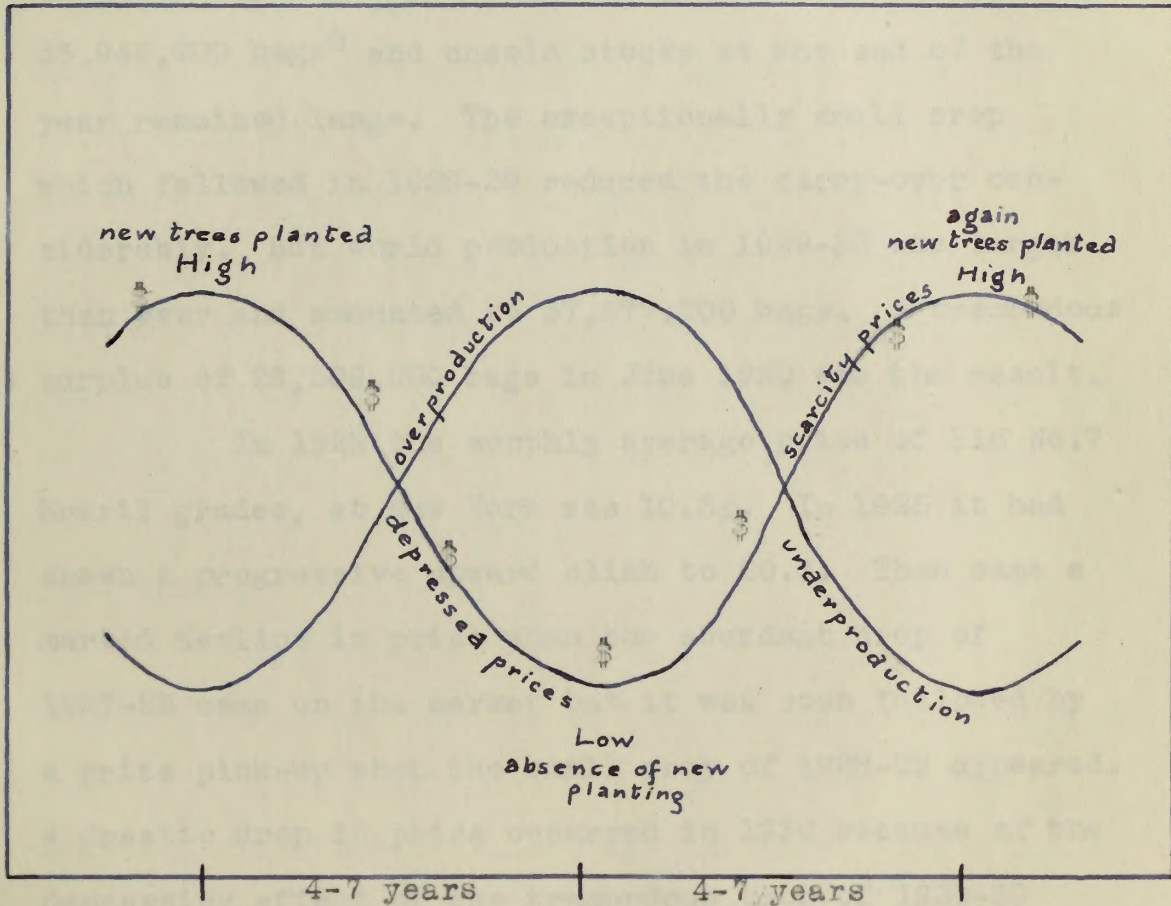
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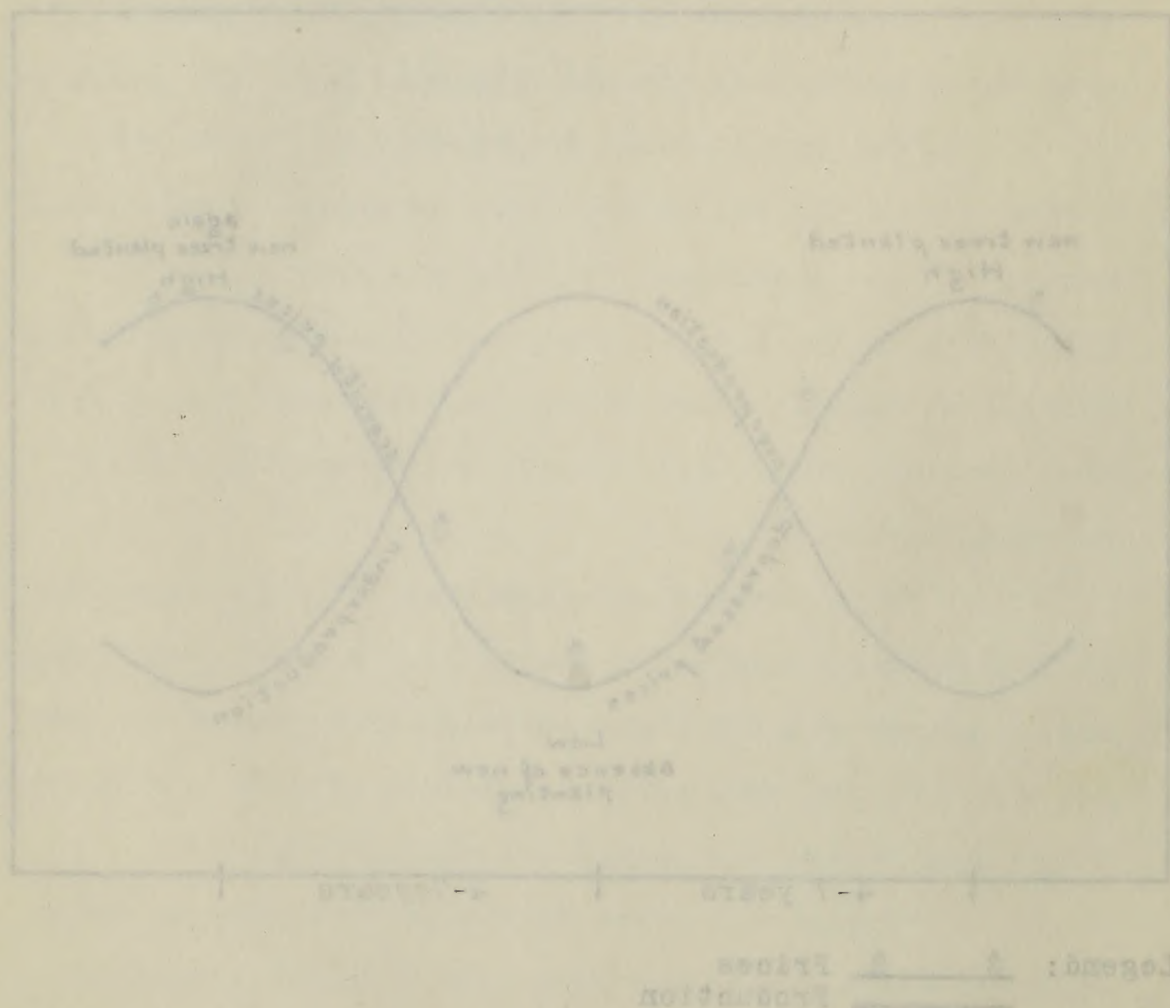
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7
COFFEE PRODUCTION CYCLE



Legend: \$ Prices
 — Production

COAST PROTECTION WORK



From 1922 to 1927 the coffee industry did not encounter any serious problems because during most of these years crops were normal. The world crop averaged about 21,000,000 bags during the four years preceding the crop year 1927-28. In that year production jumped tremendously notably in Brazil. The world crop was 33,948,000 bags⁸ and unsold stocks at the end of the year remained large. The exceptionally small crop which followed in 1928-29 reduced the carry-over considerably. But world production in 1929-30 was larger than ever and amounted to 37,677,000 bags. A tremendous surplus of 28,509,000 bags in June 1930 was the result.

In 1922 the monthly average price of Rio No.7 Brazil grades, at New York was 10.3¢. In 1925 it had shown a progressive upward climb to 20.3. Then came a marked decline in price when the abundant crop of 1927-28 came on the market but it was soon followed by a price pick-up when the small crop of 1928-29 appeared. A drastic drop in price occurred in 1930 because of the depressing effect of the tremendous crop of 1929-30 and the surplus stocks. The price kept falling until it reached a low of 4.88¢ per pound in April, 1931. The price rose again after April so that the average for 1932 was 8.1¢. The valorization plan carried on by the

8. Copeland, Melvin--Raw Material Prices and Business Conditions, p. 28, table 28.

From 1923 to 1927 the coffee industry did not encounter any serious problems because during most of these years crops were normal. The world crop averaged about 2,000,000 bags during the four years preceding the crop year 1927-28. In that year production jumped tremendously notably in Brazil. The world crop was 25,942,000 bags² and world stocks at the end of the year remained large. The exceptionally small crop which followed in 1928-29 reduced the carry-over considerably. But world production in 1929-30 was larger than ever and amounted to 27,877,000 bags. A tremendous surplus of 22,502,000 bags in June 1930 was the result. In 1932 the monthly average price of Rio No. 7 Brazil grades, at New York was 10.5¢. In 1933 it had shown a progressive upward climb to 20.5¢. Then came a marked decline in price when the abundant crop of 1937-38 came on the market but it was soon followed by a price pick-up when the small crop of 1938-39 appeared. A drastic drop in price occurred in 1939 because of the depressing effect of the tremendous crop of 1939-40 and the surplus stocks. The price kept falling until it reached a low of 4.5¢ per pound in April, 1941. The price rose again after April so that the average for 1942 was 8.1¢. The valuation plan carried on by the

2. Copeland, Melvin--New Statistical Prices and Balances Commodity, p. 22, Table 22.

Brazilian government contributed in large part to this price rise.⁹ Prices of Rio No.7 at New York hovered around \$.08 per pound for the first half of 1933, then dropped slightly to \$.076 towards the end of the year. Prices rose to a high of 11¢ in March, 1934, then declined to 9½¢ at the end of the year. A slump followed in 1935, reaching a low point in August at 6½¢. The price of Santos No. 4 grade followed the same general trend.¹⁰ Crops were so abundant in 1934-35 that coffee growers in Brazil continued their restriction schemes. These measures did not prevent the slump in prices in 1935 but probably prevented it from reaching disastrously low levels. The destruction of coffee, which was discontinued for a time, has been resumed on a large scale.¹¹

"Following a year of sub-normal imports of coffee into United States, in 1934 it was to be expected that 1935 trade would show a distinct swing in the opposite direction. Returns for the first nine months bear out this expectation. From them, 1935 promises to register the second largest importation of coffee in the country's history."¹²

9. Copeland, Raw Material Prices and Bus. Conditions. p. 28.

10. Survey of Current Business, December 1933, 1934, 1935.

11. Tea and Coffee Trade Journal, November, 1935, p. 416.

12. Ibid., December, 1935, p. 471.

Early attempts at restricting output.

In 1900-01 the coffee crop in Brazil was the largest on record but in 1901-02 it was even larger. A severe drop in prices naturally occurred. The New York price of Rio No. 7 fell from 8.26 to 6.48 in 1901, to 6.03 in 1902, and to 5.43 in 1903. From this developed the first measures for government control. A prohibitive tax was placed on land devoted to new planting in the State of Sao Paulo. This tax plan, however, was not strictly carried out. There really was no need for it, anyway, because the low prices acted as a deterrent to new planting.¹³

It was still too soon for prices to be affected by the decrease in new planting. A serious depression developed during which ownership of many plantations passed into the hands of banks and foreigners because foreclosure was necessary. Popular resentment against such a state of affairs almost precipitated a revolution. To aggravate the seriousness of the situation, another huge crop loomed in 1905. Accordingly, Sao Paulo in the latter part of 1905 officially entered upon a policy of valorization. (Valorization may be summarized as the purchase by the government of coffee on a scale large enough to enable it to control the price.) At the end of the year

13. Wallace and Edminster, International Control of Raw Materials, p. 126.

Early attempts at marketing coffee.

In 1903-04 the coffee crop in Brazil was the largest on record but in 1901-02 it was even larger. A severe drop in prices naturally occurred. The New York price of Rio No. 7 fell from 8.25 to 6.45 in 1901, to 6.05 in 1902, and to 5.45 in 1903. From this developed the first measures for government control. A prohibitive tax was placed on land devoted to new plantings in the State of Sao Paulo. This tax plan, however, was not strictly carried out. There really was no need for it, anyway, because the low prices acted as a deterrent to new plantings.¹³

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the state placed a surtax of 3 francs on every bag of coffee exported so as to obtain money to purchase coffee to withhold from market. Also the movement of coffee from the interior into Santos was restricted to 50,000 bags for each trading day.¹⁴

The Sao Paulan government at first did not have sufficient revenue to buy in large enough quantities to prevent the accumulation of surpluses. It started buying in August 1906 with the purchase of 2,000,000 bags and continued buying through December 1907, at which time it held 8,146,000 bags.

In August 1908 additional control measures were instituted. The surtax on coffee exported was increased from 3 francs per bag to 5 francs. Furthermore, a law was passed which placed an additional tax of 20% on exports over 9,000,000 bags during the crop year 1908-09, over 9,500,000 bags in 1909-10, and over 10,000,000 bags in 1910-11.

In 1908 British, French, German, and American bankers supplied a loan of £15,000,000 to enable Sao Paulo to pay back an earlier loan and finance the storing of the surplus coffee. The coffee purchased in 1906-07

14. Wallace and Edminster, International Control of Raw Materials, p. 128.

The plans placed a burden of 3 francs on every bag of coffee exported as to obtain money to purchase coffee to replace from abroad. Also the movement of coffee from the interior into Santos was restricted to 20,000 bags for each trading day.

The new Brazilian Government at first did not have sufficient revenue to buy in large enough quantities to prevent the accumulation of surpluses. It started buying in August 1933 with the purchase of 2,000,000 bags and continued buying through December 1933, at which time it held 8,142,000 bags.

In August 1933 additional control measures were instituted. The export on coffee exported was increased from 3 francs per bag to 5 francs. Furthermore, a law was passed which placed an additional tax of 20% on exports over 2,000,000 bags during the crop year 1933-34, over 4,000,000 bags in 1934-35, and over 10,000,000 bags in 1935-36.

In 1933 British, French, German, and American bankers supplied a loan of 110,000,000 to enable Sao Paulo to pay back an earlier loan and finance the storing of the surplus coffee. The coffee purchased in 1933-34

was taken as security for the loan and the selling of it was in the hands of a committee which included one representative of Sao Paulo and 6 representatives of the bankers. The loan was repaid in 1914. This permitted the Sao Paulan government to take over the remaining unsold coffee. In 1918 the last of this was sold.

Messrs. Wallace and Edminster offer a favorable opinion of this first attempt at valorization.¹⁵ The first valorization and the restrictive measures which accompanied it prevented a severe fall in price in 1906-07, and enabled the Committee conducting the operations to maintain an artificial price during the years 1910, 1911, and 1912 higher than that which the statistical position of coffee seemed to justify. This higher price resulted in a benefit to the merchants and bankers, to the government of Sao Paulo, and to the coffee planters, and in a corresponding burden on consumers. The popular indignation felt because of this bureau resulted in some international friction. In passing judgment, however, it should be remembered that this burden must be weighed against the possibly greater burden to which consumers

15. Wallace and Edminster, International Control of Raw Materials, p. 144.

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Measures. Wallace and Robinson after a further
study of this first attempt at valorization.
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international friction. In passing judgment, however,
it should be remembered that this burden must be weighed
against the possibly greater burden to which consumers

might have been subjected had no action been taken."

The second and third valorization measures, 1917-1923.

Due to the World War exports to Central Europe were stopped and restrictions were placed upon imports into belligerent countries. The effect on movement of stocks was so great that stocks in Santos increased from 889,000 bags in July 1916 to 5,639,000 in July 1917. In 1917-18 the crop was 3,000,000 more than the year before. These influences precipitated a drop in price towards the end of 1917 to $7\frac{1}{2}$ ¢ a pound. The State of Sao Paulo borrowed enough money from the federal government to buy up the surplus of 3,074,000 bags. This purchase was opportune in saving prices from a further decline. In 1919 there was a rise in prices for the following reasons: (1) in the next 2 years there followed the smallest crops since 1900; (2) at the same time trade with Germany picked up again and from it sprang increased demand for coffee. The coffee previously purchased was sold at a profit of \$20,000,000. Yet, it is hardly possible that valorization itself did any more than make prices a little firmer.¹⁶

16. Wallace and Edminster, International Control of Raw Materials, pp. 145-146.

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The second and third verification measures, 1917-1918.

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from \$20,000,000 in July 1917 to \$25,000,000 in July

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The coffee previously purchased was sold at a profit

of \$20,000,000. Yet, it is hardly possible that

verification itself did any more than make prices a

little better.

The third valorization merely strengthened prices rather than raised them to any extent. Conditions leading up to it were the small crop in 1919-20 which was followed by a large crop in 1920-21. Not only was world demand slack on account of the widespread depressed condition of business but countries in Europe had placed taxes on the importation of luxuries, including coffee, thus diminishing imports. The consequence of this situation was that the New York price of Rio No. 7 began to fall. At the end of 1917 it reached 7¢ a pound and continued downward to 5¢ in March 1921. This time the federal government played the most important part in the plan instead of the State of Sao Paulo. It started to purchase coffee in March 1921 and once had 4,534,000 bags on hand. Shipments of coffee into Santos were limited to 30,000 bags daily and were later cut to 28,000 bags in Santos and 11,000 bags in Rio.

Since the Santos crop of 1922-23 was a very short one, prices started an upswing in the middle of 1921, which continued until January 1925. Thus nature came to the aid of coffee growers and was a big factor in the success of the third plan. It is difficult to say how much of the price rise was caused by valorization measures, but they can hardly be credited with any more

The third valuation merely ascertained prices rather than raised them to any extent. Crops of coffee leading up to it were the small ones in 1912-13 which was followed by a large crop in 1913-14. But only was world demand slack on account of the widespread depressed condition of business but countries in Europe had placed stress on the importation of luxuries, including coffee, thus diminishing imports. The consequence of this situation was that the New York price of No. 7 began to fall. At the end of 1914 it reached 1/4 a pound and continued downward to 3/4 in March 1921. This time the Federal Government played the most important part in the plan instead of the State of Sao Paulo. It started to purchase coffee in March 1921 and once had \$,554,000 paid on hand. Shipments of coffee into Santos were limited to 30,000 bags daily and were later cut to 25,000 bags in Santos and 15,000 bags in Rio. Since the Santos crop of 1920-21 was a very short one, prices started an upward in the middle of 1921, which continued until January 1922. This nature came to the aid of coffee growers and was a big factor in the success of the third plan. It is difficult to say how much of the price rise was caused by valuation measures, but they can hardly be credited with any more.

than a small share in view of the fact that when the stored coffee was sold by the federal government in 1923, the upward trend in prices continued rather than ceased. The Brazilian governments profits in the sale were estimated at 40% of the capital invested.¹⁷

The Institute for the Permanent Defense of Coffee¹⁸

So successful was the third valorization plan that there was little opposition when a measure for permanent control of the coffee supply was proposed. The federal government of Brazil passed legislation in June, 1922, creating the Institute for the Permanent Defense of Coffee. It was part of a general law designed to develop trade in a selected group of Brazilian products. Ill feeling soon arose in Sao Paulo because the federal government occupied itself with other commodities besides coffee. Also it endeavored to raise Brazilian exchange rates. This was harmful to the interests of producers and exporters. Accordingly, the federal government gave up the plan in 1924 and the State of Sao Paulo entered the field again. Towards the end of 1924 it purchased from the federal government ten large warehouses which had been constructed in the interior. The next step was to pass a law for the Permanent Defense of Coffee.

17. Wallace and Edminster, International Control of Raw Materials, pp. 146-150.

18. Ibid., pp. 150-170.

than a small share in view of the fact that when the
stored coffee was sold by the Federal Government in
1937, the amount found in stores contained coffee beans
ceased. The Brazilian Government profits in the sale
were estimated at 50% of the capital invested. IV

The Institute for the Permanent Defense of Coffee

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had been constructed in the interior. The next step
was to pass a law for the Permanent Defense of Coffee.

IV. Wallace and Whitaker, International Commerce of
and Materials, pp. 142-143.
18. Ibid., pp. 142-143.

The administration was to be carried on by an Institute or committee consisting of the Ministers of Finance and Agriculture, one representative of the exporters, and two representatives of the coffee planters. The directing head was the Minister of Finance.

The control of prices by the Institute was to be accomplished through two devices: the publication of statistics and the regulation of quantities coming into the market at Santos. The publication of statistics was designed to curb speculation and unusual price changes by giving publicity to the exact condition of the market.

The outstanding feature of the new plan was the establishment of government warehouses in the interior. This made it easy to limit entries into Santos because immense quantities of coffee could be stored in them. The warehouses have been added to continually since 1924, and now probably have a capacity of over 12,000,000 bags. The law compels planters to send all their coffee to government warehouses. Thus, stocks are always in sight and it is up to the government to handle them most advantageously. Railroads obtain shipments only from the warehouses. The first lot of coffee put in the storehouse is the first one to be taken out.

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In 1926 the Coffee Institute borrowed £10,000,000 from London bankers to cover the expenses of storing the coffee which could not be covered by taxes alone. Additional borrowings from the same source were resorted to in 1927, 1928, and 1929. All of these funds were used to make loans to coffee growers. The collateral for them was bills of lading and warehouse receipts.

A tax of one milreis gold (54¢) on every bag of coffee transported from warehouses to Santos was levied to take care of the general expenses of permanent defense, interest on, and amortization of foreign loans.

The tremendous crop of 1927-28 was handled by the extension of financial support to growers up to 75% of the market value of their coffee, for which the growers paid 8 - 9% interest. There was no price collapse on account of the large crops at this time. There was, however, a serious increase in stocks.

These defense measures seem to have been responsible for keeping prices up for several years. In January 1925 the price of 23.5¢ was the highest in the history of coffee. Then came a decline to 13.33¢ in September 1927. After that the trend was upward again until February 1929.

In 1930 the Coffee Institute borrowed £10,000 from London bankers to cover the expenses of storing the coffee which could not be covered by taxes alone. Additional borrowings from the same source were reported as in 1937, 1938, and 1939. All of these funds were used to make loans to coffee growers. The collateral for them was bills of lading and warehouse receipts.

A tax of one milinda gold (54%) on every bag of coffee transported from warehouses to Santos was levied to take care of the general expenses of government defense, interest on, and amortization of foreign loans. The tremendous crop of 1937-38 was handled by the extension of financial support to growers up to 75% of the market value of their coffee, for which the growers paid 3 - 5% interest. There was no price collapse on account of the large crops at this time. There was, however, a serious increase in stocks.

These defense measures seem to have been responsible for keeping prices up for several years. In January 1938 the price of C.S. was the highest in the history of coffee. Then came a decline to 15.50 in September 1937. After that the trend was upward again until February 1939.

All this time large stocks of coffee were piling up in warehouses. When permanent defense was adopted, a new situation arose. Regulation of supplies accessible to exporters came wholly under the hand of defense authorities. In July 1924 almost 4,600,000 bags were held in the interior. Supplies in Brazilian ports remained small. Thus, the amounts kept off the market must have held prices at a higher level than they would have been ordinarily.

When the actual harvesting of the 1927-28 crop began, prices began to rise on account of the continued limitation of shipments to port. Almost 13,000,000 bags had piled up in the warehouses by the end of the crop year 1927-28. This was as much as the exports for an entire year.

After the small crop in 1929 it was possible to reduce the supply in storage by 4,000,000 bags. This was not enough, however, to prevent the crisis which arose in 1929-30 because of the large new crop. At this time world production began to outrun world consumption by a wide margin. "In July 1929 the visible world supply of coffee was 14,250,000 bags of which approximately 10,500,000 bags (including stocks in the interior) were in Brazil, and it was estimated

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visible world supply of coffee was 15,000,000 bags
of which approximately 10,000,000 bags (including stocks
in the interior) were in Brazil, and it was estimated

that on July 1, 1930, the visible supply would be between 21 and 22 million bags, of which some 8 or 9 million bags would be held in Brazil."¹⁹ Such a surplus would be only about 2,000,000 bags short of annual world consumption. These stocks had been carried by credit. Finally, the credit of the Institute and private banks became exhausted. Assets everywhere were frozen. A severe drop in prices from 16¢ a pound in September to 11 $\frac{3}{4}$ ¢ in November was the result. The institute had to borrow from outside sources again -- this time from British, Continental, and American bankers. The loan was for \$100,000,000 and was secured by 16,500,000 bags of coffee. The loan agreement provided that this entire amount must be sold within ten years and that future crops must be marketed currently. The agreement in regard to future current marketing of crops was considered on all sides as an indication of the collapse of the defense plan.

Repercussions from the plan for permanent defense.

The high prices of coffee caused a decrease of purchases in the United States. Imports into this country in 1925 decreased 9% from the previous year. There was also a reaction to the Institutes operations

19. Ibid., p. 160

that on July 1, 1930, the whole supply would be be-
tween \$1 and \$2 million bags, of which some \$1 or 2
million bags would be held in Brazil. Such a sup-
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Repercussions from the plan for permanent defense.
The high prices of coffee caused a decrease
of purchases in the United States. Imports into this
country in 1930 decreased 25 from the previous year.
There was also a reaction to the Institute's operations

in its own country. It was claimed that shipments into Santos had not been regulated as well as they had been in earlier years. The charge was made that a larger part of the crop was allowed to come to market in the early part of the crop year 1925-26 than in some previous years, and that the valorization purchases did not keep prices steady. In some circles the Institute was criticized for raising prices too high and in other circles for keeping them too low.

One of the primary aims had been to stimulate the raising of other crops besides coffee. This purpose seems to have been defeated rather than promoted because the raising of coffee prices made coffee planting more profitable than ever before over the sale of other crops. The acreage devoted to coffee planting increased not only in the state of Sao Paulo but also in other parts of Brazil.

The collapse of prices in 1929-30 demonstrates the difficulties to be overcome in executing a plan for keeping supplies off the market, whether through purchases by the state (valorization) or through providing storehouse and credit facilities to growers (permanent defense).

The cause of the failure of permanent defense seems to lie in its undue elevation of prices. In 1924

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the great rise in prices undoubtedly stimulated new planting of coffee trees. The crop from these trees augmented the already large supply and caused the precipitous drop in prices which began early in 1929.

Continuation of the problem.

The Brazilian revolution of October 1930 was largely caused by the harsh feeling aroused towards the Sao Paulo defense plan. A provisional government came into power of the revolution. In February 1931 a decree was passed which allowed more liberal shipments of coffee to Santos. At the same time a tax of 1 milreis was placed on every new tree planted during the next five years. These measures seem to have had no effect. Surplus stocks were 20,030,000 in July 1931, and a new crop of 15,000,000 bags had to be added to it. World consumption was predicted at 24,600,000.

Various other devices were tried to efforts to wipe out the surplus. One of them was a system of exchanges. 1,050,000 bags of coffee were exchanged for 25,000,000 bushels of wheat from the United States. Eleven airplanes from Italy were swapped for their monetary equivalent in coffee. Proposals were also made to trade coffee for German coal and Russian wheat.

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made to trade coffee for foreign coal and Russian wheat.

A more drastic method of eliminating the surplus was the actual burning of coffee. It began at the end of the summer of 1931 with the destruction of \$70,000 worth daily. The purchase price for the burned coffee was obtained from a tax of 10 shillings on each bag of coffee exported. The burning of this coffee was the cause of the bloodless revolution which overthrew the provisional government in November 1931. The coffee planters and military authorities were the forces behind the new government. The planters had insisted before the change of government that the federal government burn 18,000,000 bags. The federal government had refused because part of these stocks had been pledged as collateral for the \$100,000,000 international loan. Under the new government burning was resumed but on a larger scale.²⁰

Attempts to eliminate the surplus since 1931.

The destruction of coffee by burning has continued to be the most important device to reduce the surplus. The 10 shilling tax on exports, as before, has financed the program. The total reduction of stocks up to November 30, 1934 was 33,560,000 bags.²¹ This does not include the 479,000 bags destroyed prior to June 1931 by the Sao Paulo Coffee Institute. In selecting coffee for incineration, the attempt has always been made to pick

20. Saturday Evening Post - February 20, 1932 - "South America Tomorrow" - Isaac F. Marcossion - p. 85

21. Tea and Coffee Trade Journal-Dec. 1934--p. 590.

A more drastic method of eliminating the surplus was the
 actual burning of coffee. It began at the end of the summer
 of 1951 with the destruction of 170,000 sacks. The
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 15,000,000 in 1952-53, 10,000,000 were used for this
 purpose. In 1953-54, 170,000 sacks of coffee were
 burned by the federal coffee authorities. In 1954-55
 for destruction, the surplus was always more than 100,000

50. Saturday Evening Post - February 10, 1952 - "Coffee and
 the Government" - page 1.
 51. The New York Times - January 10, 1952 - page 1.

the inferior grades. This has resulted in a gradual improvement in the quality of Brazilian coffee sent to foreign markets in the last five years. The stock of coffee held as collateral for the \$100,000,000 loan secured in 1931 has been segregated and reduced only according to a firmly established plan. Under this plan Brazil has levied an additional tax of 5 shillings per bag of coffee exported and used the proceeds to make regular amortization payments on the loan. Then the coffee held as collateral for this recently amortized part of the loan is released and either enters into commerce or is burned.²²

Another solution of the problem has been an extensive advertising campaign carried on jointly by the Brazilian producers and the coffee trade. A third method of relieving the situation was a bonus scheme, whereby all importers of coffee received a free shipment of coffee to the amount of 10% of their purchases. Resentment against this plan in the United States caused it to be quietly given up.

From this review it appears that Brazil is handling her difficulties well. If such drastic measures had not been undertaken, she would have had on hand June 30, 1934, 52,000,000 bags of coffee. When it is considered that the total annual consumption of the world is hardly more than 25,000,000 bags, it can be seen

the latter grades. This was reported in a general improvement in the quality of Brazilian coffee sold to foreign markets in the last five years. The stock of coffee held as collateral for the \$100,000,000 loan matured in 1931 has been suggested and received only according to a fairly established plan. Under this plan Brazil has provided an additional tax of a shilling per bag of coffee exported and used the proceeds to buy foreign machinery and equipment for the home. When the coffee sold as collateral for this recently matured part of the loan is released and other coffee later becomes available, another solution of the problem has been an extensive advertising campaign carried on jointly by the Brazilian producers and the coffee trade. A third method of relieving the situation was a bonus scheme whereby all exporters of coffee received a 20% bonus on the amount of the amount of 10% of their production. Resentment against this plan in the United States caused it to be definitely given up.

From this review it appears that Brazil is handling her difficulties well. It was discussed earlier and has been mentioned, she would have had on hand June 30, 1934, \$2,000,000 more of coffee. When it is considered that the total annual consumption in the world is nearly 100,000,000 bags, it can be seen

what a disastrous collapse of prices would have occurred, with the resulting impoverishment of her population, had these stocks been thrust upon the market. As the situation now exists, Brazil's statistical position is good and prices are reasonable.²³

Alternative plan for Brazil.

The ultimate solution of the Brazilian problem of overproduction is actual retirement of a portion of the acreage devoted to coffee cultivation and the substitution thereon of other crops. The present condition is one of permanent overexpansion because statistics show that during the last twenty years Brazil's production has always been greater than the consumption of her coffee in the rest of the world. The federal government of Brazil would do well to impose a flat percentage reduction rate on coffee acreage. The Brazilian department of agriculture presumably already knows what other crops can be most profitably grown and sold at home and abroad. The next step would be to pass legislation compelling land owners to plant specific crops on the land previously devoted to coffee or else not replant it at all. This undertaking would present problems of administration akin to all measures of bureaucratic control. The Ministry of Agriculture would un-

23. Ibid - p. 272

what a disastrous collapse of prices would have occurred, with the resulting impoverishment of her population, had these stocks been thrown upon the market. As the situation now exists, Brazil's economic position is good and prices are reasonable.

Alternative plan for Brazil.

The alternative plan of the Brazilian people of overproduction is a natural result of a surplus of the average devoted to coffee cultivation and the substitution thereof of other crops. The present condition is one of permanent overproduction because statistics show that during the last twenty years Brazil's production has always been greater than the consumption of her coffee in the rest of the world. The interest of Brazil would be well to reduce a little her coffee production rate on coffee acreage. The Brazilian department of agriculture has already known that other crops can be grown profitably on the same land. The next step would be to have land-labor reorganizing land owners to plant suitable crops on the land previously devoted to coffee. It is also regrettable that the coffee industry would benefit from the elimination of government control of the coffee market. The Ministry of Agriculture would be

dergo expansion, crop and foreign trade experts would have to be hired, and a larger clerical force would have to be taken on. Yet the administrative costs of the undertaking would not be greater than the monetary loss already incurred in the destruction of 33,500,000 bags of coffee. Assuming a value of at least 5¢ per pound for the coffee burned, this loss was \$221,000,000 (132 pounds to a bag) from June 1931 to November 1934 - and the burning still continues.

large extension, and a further extension would
have to be made, and a further extension would have
to be made on. For the administrative costs of the
undertaking would not be greater than the monetary loss
already incurred in the extension of 2,500,000
of coffee, assuming a value of at least 40 per pound
for the coffee beans. This loss was 2,500,000,000
(250 million) as a result from 1931 to November 1934 -
and the further extension.

PART III

The Rubber Industry

History of rubber production.

Hevea brasiliensis is the botanical name for the plant from which is obtained Para rubber, the rubber most in demand commercially. Before 1900 the principal source of rubber was the wild *Hevea* plant in the Amazon valley. The trees grew wild in the Brazilian jungle and were tapped by natives. The result was an irregular and impure supply of rubber. Sir Henry Wickham - an Englishman, realized the advantage of placing rubber trees on plantations, thus assuring more uniform quality and a larger supply. This was just what the trade had been looking for. Accordingly, he succeeded in smuggling the seeds of the *Hevea* tree out of Brazil, planting the seedlings in nurseries in London and transplanting them for development on plantations in Ceylon and Singapore. From this beginning plantation cultivation spread to the entire Malay Peninsula, Burma, India, Siam, Sumatra, Java, and Borneo.¹ In 1900 these Middle East countries produced only four tons of plantation rubber - as compared with 26,750 tons of wild rubber from Brazil and 27,000 tons from other countries in South America and Africa. By 1930 the figures for plantation rubber had jumped 800,000 tons as compared

1. Encyclopedia Brittanica-Vol. XXIII Eleventh Edition
p. 798

with 20,800 tons from Brazil and other wild rubber producing countries.²

The hot, damp climate necessary for rubber tree cultivation is found only between latitudes 30° north and 30° south of the Equator, and this region encircling the earth is called the "Rubber Belt". The "Inner Rubber Belt", however, has an even more favorable climate for rubber. This region extends between latitudes 10° north and 10° south of the Equator. The belt includes the Amazon valley; portions of Bolivia, Peru, and Venezuela in South America; the Belgian Congo and Liberia in Africa; Ceylon in the East Indies; and the Philippine Islands in the Pacific Ocean.³ *Hevea brasiliensis* grows best in lands of low altitude and rich soil capable of holding moisture.

Sources of capital invested.

By far the greatest amount of capital invested in rubber plantations comes from the English and the Dutch. In England a wild speculative boom occurred when the early rubber companies were being financed in 1908-1910. The rubber producing companies were paying phenomenal dividends in as much as rubber, at that time, had jumped from \$1.00 to \$2.90 per pound.

2. Glover and Cornell - The Development of American Industries - p. 230. - Prentice Hall, 1934, N.Y.

3. Ibid - p. 229.

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2. Glover and Gurnell - The Development of American
Industries - p. 230 - Prentice Hall, 1934, N.Y.
3. Ibid - p. 230.

American capital is represented by the Ford Motor Company plantations in Brazil, Firestone in Liberia, United States Rubber in British Malaya and Sumatra, and Goodyear Rubber Co. in Sumatra. Of these plantations, those owned by the United States Rubber Co. and Goodyear are the only ones that have produced rubber extensively. These plantations represent new planting stimulated by the high prices resulting from the operation of the Stevenson Plan.

Characteristics of plantation rubber tree cultivation.

Rubber trees require a period of six to eight years to reach maturity. Thus, a planter must expect to wait at least ten years before he begins to receive a decent return on his investment. This is a strong deterrent to the flow of capital into rubber cultivation during periods of low prices.

Rubber trees produce most abundantly under constant care. Thus a stable labor supply close at hand is necessary in order to insure ideal growing conditions. Also, in the preparation of ground for planting a vast amount of work must be done. It is necessary to hew away the dense tropical forest and transplant the seedlings to the cleared area. After the plantation is laid out, jungle growth must be constantly kept back and leguminous crops planted between the trees in order to retain the moisture in the soil.

Estate and native rubber compared.

The size of plantations varies from estates covering thousands of acres to gardens of only a fraction of an acre. The latter are tended by native owners and their families. The same methods of cultivation are employed except that they are more thickly planted and contain other crops such as rice, pineapples, and cassava. Production of rubber on small native holdings is not as responsive to price changes as the production of the large estates. The natives depend on agriculture for a livelihood and cultivate any crops that are suited to the soil and climate. They push this cultivation as intensively as possible with little regard for price changes, the labor being carried on by the entire family. Thus they represent a section of low cost producers that seriously competes with the estate owners who attain low-cost production through large-scale operation.

Review of rubber production and prices.

From 1900 to 1908 the price of rubber hovered around \$1.00 per pound, then began to rise under the impetus of the demands of tire manufacturers in the United States until it reached a top of \$2.90. In the early part of 1920 the price commenced to drop

Native and Native Rubber Companies

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Review of Rubber Production and Prices

From 1900 to 1903 the price of rubber
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under the impact of the demand of the United States
in the United States until it reached a peak of \$2.50.
In the early part of 1900 the price advanced to \$2.50

and continued downward till 1921. The war period was accompanied by the phenomena of declining rubber prices when other prices were rising. This was due to overstimulation of the industry during the period of high prices culminating in 1910. The price, however, had been sufficiently high in 1910-1921 to bring new land into cultivation, so in the middle of 1921 the price sank even lower to 11.5¢ per pound, when new production came on the market. In 1922 the price rose to an average of 17.5¢, continued upward to 72.46¢ in 1925, then started to slump, reaching a low of 3.49¢ in 1932. The following table tells the story, especially of the piling up of rubber stocks to a total of 517,000 at end of 1932:

1905	605	749	195	57.72
1906	643	807	122	52.48
1907	643	736	142	50.00
1910	821	846	355	11.08
1931	747	800	176	6.17
1932	782	873	217	3.42

Source: Copeland, Edwin T., Raw Material Prices and Business Conditions, p. 26.

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into cultivation, so in the middle of 1921 the price
was even lower to 11.50 per pound, when new production
came on the market. In 1922 the price rose to an
average of 14.50, continued upward to 17.50 in 1923,
then started to decline, reaching a low of 8.50 in
1924. The following table tells the story, especially
of the falling up of rubber prices to a level of
\$17.00 at end of 1923:

CRUDE RUBBER

(000 omitted)

Year	World Production (tons)	World Consumption (tons)	Central Stocks at end of year (tons)	Average Price at New York (cents)
1922	379	394	205	17.5
1923	412	439	163	29.45
1924	421	458	105	26.2
1925	516	551	76	72.46
1926	614	534	149	48.5
1927	605	589	193	37.72
1928	649	667	122	22.48
1929	863	785	228	20.55
1930	821	685	365	11.98
1931	797	669	496	6.17
1932	709	670	517	3.49

Source: Copeland, Melvin T., Raw Material Prices and Business Conditions, p. 25.

CRUDE RUBBER

(000 omitted)

Year	World Production (tons)	World Consumption (tons)	United States at end of year (tons)	Average price at New York (cents)
1932	379	364	303	14.3
1933	412	439	325	20.45
1934	422	428	308	20.3
1935	474	461	78	22.45
1936	614	535	149	40.3
1937	603	588	182	37.75
1938	648	657	125	32.45
1939	683	765	128	20.35
1940	621	655	325	11.95
1941	737	869	402	6.15
1942	709	670	317	5.45

Source: Copeland, Melvin T., Raw Material Prices and
Business Conditions, p. 25.

Because of new restriction agreements and increased consumption of rubber for tires, rubber quotations began to rise in 1934 after the depression low and reached 15 9/16¢ per pound towards the end of the year. By September of 1935 they had fallen off a little to 11 5/8⁵¢.

6

The Stevenson Plan.

It was asserted by the rubber trade in England in 1920 that prices were so low as to threaten the abandonment of vast areas devoted to rubber cultivation. Unless some sort of cooperative action were taken, growers would become bankrupt and their plantations would return to jungle. A period of great scarcity of rubber would follow in which consumers would be seriously penalized. These claims may have been exaggerated, nevertheless the Colonial Office of the British government responded by appointing a committee, under the chairmanship of the late Lord Stevenson, to inquire into conditions in the rubber industry and report. Private efforts at voluntary control of rubber production had already been tried and had failed. The growers were well represented on the

5. United Press Quotations, Review of Reviews, October, 1935, p. 54.

6. Wallace and Edminster, International Control of Raw Materials, p. 175-194.

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in 1930 that prices were so low as to threaten the aban-
donment of vast areas devoted to rubber cultivation. Unless
some sort of cooperative action was taken, growers would
become bankrupt and their plantations would revert to
jungle. A period of great scarcity of rubber would
follow in which consumers would be seriously penalized.
These claims may have been exaggerated, nevertheless
the Colonial Office of the British Government responded
by appointing a committee, under the chairmanship of the
late Lord Stevenson, to inquire into conditions in the
rubber industry and report. Private efforts at voluntary
control of rubber production had already been tried and
had failed. The process were well represented on the

committee. It reported in May 1922 in favor of seeking the cooperation of the Dutch government in a program of output restriction. The Dutch producers declined to join the plan, so the Colonial Office went ahead alone. Directions concerning the proper legislation to be passed were sent to the colonies, viz: The Colony of the Straits Settlement, the four Federated Malay States, the five Protected Malay States on the Malay Peninsula, the protectorate of Sarawak on the island of Borneo, and Ceylon. The colonies each enacted legislation to restrict exports, and thereby production of rubber. This group of enactments was called the Stevenson Restriction Act and became effective Nov. 1, 1922.

The colonial authorities were given power to allot to each estate a figure based on production in the year ended October 31, 1920. This figure was called "standard production", yet it always remained less than the full productive capacity of the plantations by amounts estimated at from 13 to 20%. The act provided for export quotas to be altered every three months to correspond with price changes. The exact provisions were originally as follows:⁷ "During the three months

7. Ibid., pp. 177-178.

committee. It reported in May 1933 in favor of creating

the cooperation of the Dutch government in a program

of output restriction. The Dutch producers declined

to join the plan, as the colonial office was asked

alone. Discussions concerning the proper legislation

to be passed were sent to the colonial office.

Colonies of the British Empire, the Dutch East Indies

Malay States, the five protected Malay States on the

Malay Peninsula, the protectorate of Sarawak on the

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The colonial authorities were given power

to allow to each estate a figure based on production

in the year ended October 31, 1932. This figure was

called "standard production," and it allowed each

less than the full productive capacity of the plantation

by amounts estimated at from 15 to 30%. It was provided

for export duties to be allowed every three months to

correspond with price changes. The exact provisions

were originally as follows: "During the three months

beginning Nov. 1, 1922, no plantation is allowed to export at a rate which will exceed in a full year, 60% of its standard production. If during that quarter, the price of rubber in London averages less than one shilling (23¢) per pound, the percentage of standard production upon which the rate of exportation for the following should be based is reduced from 60 to 55%. Similarly, if in any subsequent quarter, the price of rubber in London averages below one shilling a pound, 5% of standard production is subtracted from the percentage which has been permitted to be exported in the previous three months. If the price in London for any quarter averages over 1 s. 3 d. (29¢) a pound, the amount which might be exported during the next three months will be made greater than in the preceding quarter by 5% of standard production. And if the London price of rubber during any quarter exceeds 1 s. 6 d. (34¢), the rate of the release of rubber for export will be raised by 10% of standard production."

In 1925 prices rose to over \$1.00 per pound, then began to fall rapidly. During 1926 the drop was so rapid that the Act was changed to regulate exports more severely. The following changes were made to

beginning Nov. 1, 1952, no quantity is allowed to
export of a rate which will exceed in 1951 year,
50% of its standard production. If during that year
for, the price of rubber in London averages less than
one shilling (12 1/2) per pound, the percentage of stan-
dard production upon which the rate of exportation
for the following year is based is reduced from 50
to 60%. Similarly, if in any subsequent year,
the price of rubber in London averages below one
shilling a pound, 50% of standard production is re-
duced from the percentage which has been permitted
to be exported in the previous three years. If the
price in London for any quarter averages over 1 s. 6 d.
(24 1/2) a pound, the amount which might be exported
during the next three months will be made greater than
in the preceding quarter by 5% of standard production.
And if the London price of rubber during any quarter
exceeds 1 s. 6 d. (24 1/2), the rate of the release of
rubber for export will be raised by 10% of standard
production.

In 1952 rubber was at over 15.00 per pound,
then began to fall rapidly. During 1952 the price was
no longer high and was changed to regulate exports
more severely. The following changes were made in

go into effect for the twelve months beginning Nov. 1, 1926:⁸

"If the average London price of rubber is less than 21 d. (43¢) but not less than 15 d. (29¢) per pound during any quarter, the percentage of standard production exportable at the minimum rate of duty for the ensuing quarter will be reduced 10%, unless the reduction is from the figure of 100% when reduction will be to 80%.

"If the average price for any quarter is between 21 d. (43¢) and 24 d. (49¢), no change will be made in the exportable allowance unless in each of three consecutive quarters the average price is over 21 d. (43¢), in which case the exportable percentage for the fourth quarter will be increased by 10%.

"If the average price for any quarter stands at 24 d. or over, the exportable percentage will be increased by 10 for the ensuing quarter, except when the figure stands at 80%, when an advance will be made to 100% of standard production.

"If the average price is below 15 d. (29¢) in any quarter, the exportable percentage in the ensuing quarter will be reduced to 60%.

"If the average price in any quarter is over

8. Ibid., p. 179.

to take effect for the twelve months beginning Nov. 1, 1933:

"If the average London price of rubber is less

than \$1.4 (1934) but not less than \$1.3 (1935) per pound

during any quarter, the percentage of standard produc-

tion exportable at the maximum rate of duty for the

ensuing quarter will be reduced 10% unless the re-

duction is from the figure of 100% when reduction will

be to 50%.

"If the average price for any quarter is be-

tween \$1.3 (1934) and \$1.4 (1935), no change will be

made in the exportable allowance unless in each of

three consecutive quarters the average price is over

\$1.4 (1935), in which case the exportable percentage

for the fourth quarter will be increased by 10%.

"If the average price for any quarter stands

at \$1.5 or over, the exportable percentage will be

increased by 10 for the ensuing quarter, except when

the figure stands at 50%, when no advance will be

made to 100% of standard production.

"If the average price is below \$1.3 (1934)

in any quarter, the exportable percentage in the ensuing

quarter will be reduced to 50%.

"If the average price in any quarter is over

36 d. (74¢), the exportable percentage in the ensuing quarter will be advanced to 100%.

"No provision is made for production at a rate above 100% or below 60% of standard production."

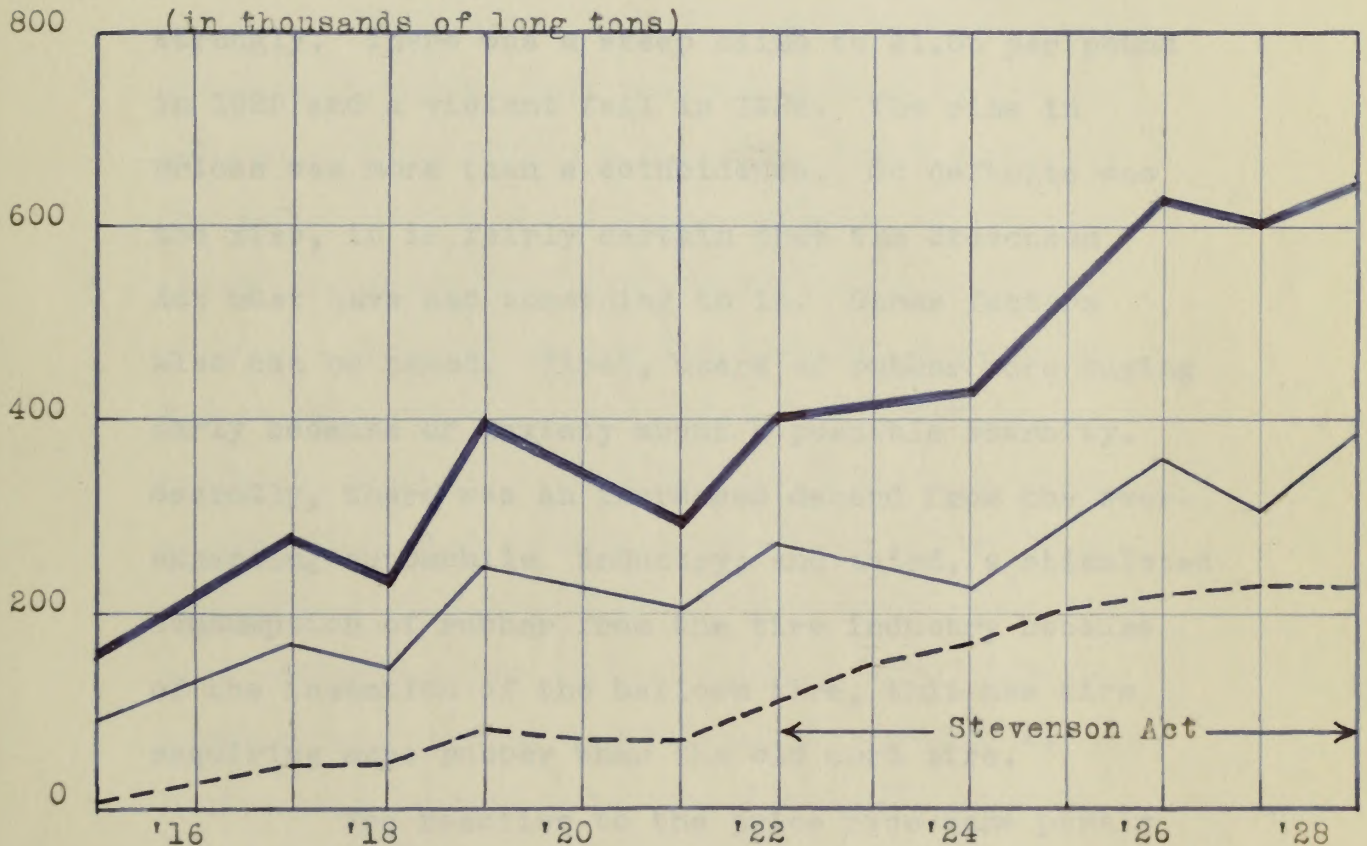
These new regulations, however, had little effect in preventing the downward trend in prices. The British government lost faith in the plan and both the British public and large American consumers of rubber became more and more critical of it. So on November 1, 1928 it was given up entirely.

Factors influencing operation of the Plan.

The Stevenson Act did not stop the upward trend in world output of rubber for several reasons. Most important of all, the production of the Dutch colonies, especially the Dutch East Indies, was not included in the restriction plan.⁹ Also, the cultivation of wild rubber all over the world and of estate rubber in India and French Indo-China were beyond the jurisdiction of the plan. Furthermore, restriction did not affect the smallest estates. This production though slight, helped increase total output. Finally, certain British Malaya rubber producers evaded the export tax by smuggling rubber into the Dutch East Indies. From

9. Copeland, Melvin T., Raw Material Prices and Business Conditions, p. 25.

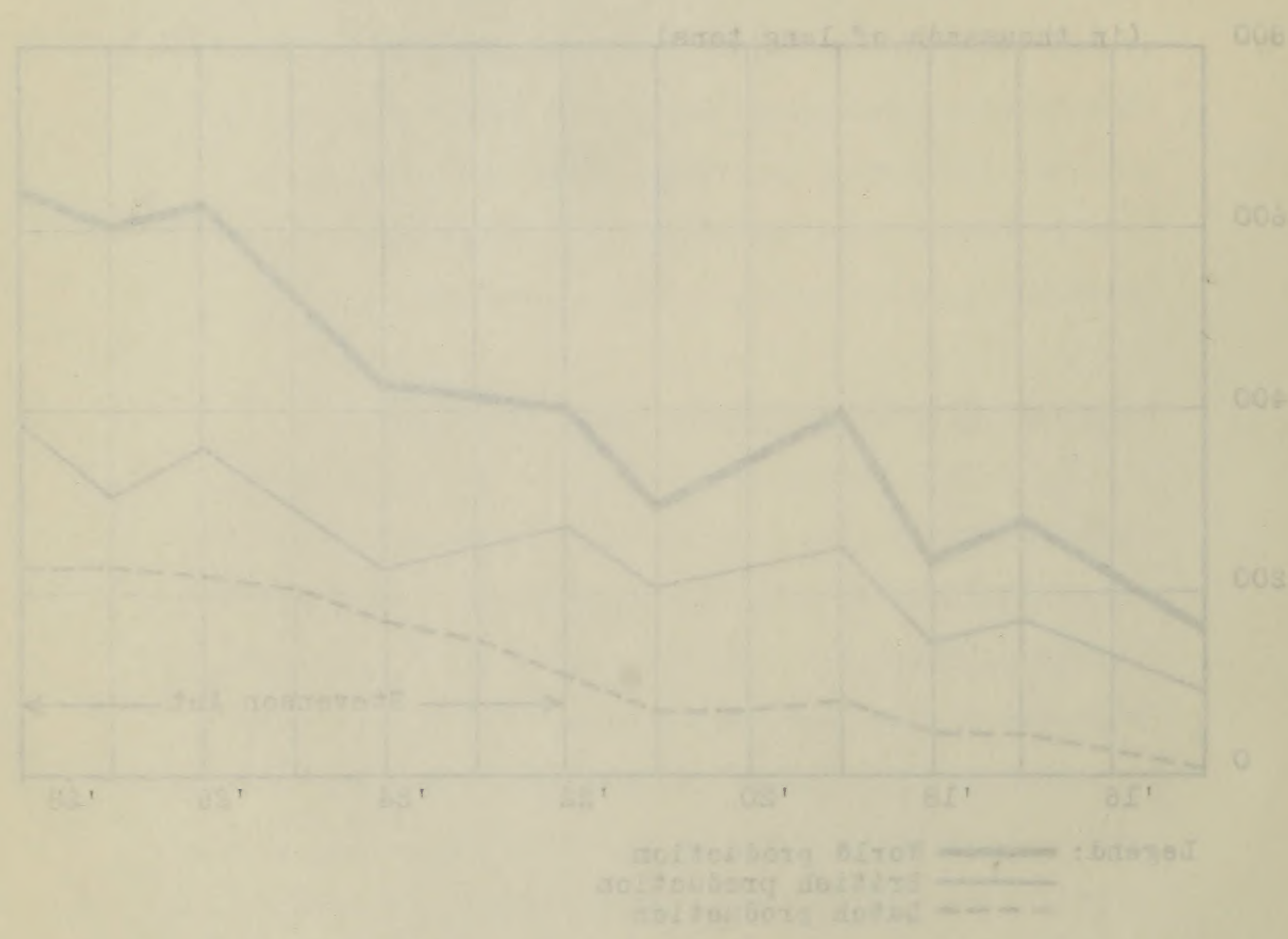
- PRODUCTION OF RUBBER, 1915-1928 -



Legend: — World production
— British production
--- Dutch production

Source: Wallace and Edminster - International Control of Raw Materials - p.185

PRODUCTION OF RUBBER, 1911-1925



Sources: Wallace and Knapp - International Control of Raw Materials - p. 161

there it was shipped out with Dutch rubber.¹⁰ The chart on p. 50 gives a picture of the temporary decrease in British output and the permanent increase in world output.

Prices, as has been mentioned, reacted strongly. There was a steep climb to \$1.05 per pound in 1925 and a violent fall in 1926. The rise in prices was more than a coincidence. So definite was the rise, it is fairly certain that the Stevenson Act must have had something to it. Other factors also can be named. First, users of rubber were buying early because of anxiety about a possible scarcity. Secondly, there was an increased demand from the ever-expanding automobile industry; and third, a stimulated consumption of rubber from the tire industry because of the invention of the balloon tire, this new tire requiring more rubber than the old cord tire.¹¹

The reaction to the price rise came partly from the state of mind of consumer and partly from natural forces. When it became clear to industrialists that the Stevenson Plan was going to fail, they held off buying in anticipation of a drop in prices. This reduction in purchases contributed materially to the actual fall in prices which was started by the jump in

10. Wallace and Edminster, p. 182.

11. Copeland, Melvin T., Raw Mat. Prices and Business Conditions, p. 25.

there it was shipped out with much rubber. It is
clear on p. 32 gives a picture of the temporary de-
crease in British output and the permanent increase
in world output.

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natural forces. When it became clear to industrialists
that the Stevenson plan was going to fail, they held off
buying in anticipation of a drop in prices. This re-
action in business contributed materially to the
actual fall in prices which was started by the jump in

production of from 528,000 tons in 1925 to 624,000 tons in 1926,¹² and the resort to reclaimed rubber by the industry's largest consuming country.¹³

Justification for the Stevenson Plan.

It is very probable that the agitation for the Stevenson Plan was prompted originally not so much on account of the alleged depressed condition of the rubber industry but rather because of the desire of the producers for quasi-monopolistic profits.

Costs of production had been reduced as prices fell, most all companies were operating at a profit in 1922, and no failures occurred in Malaya even in 1921-22. Neither was the slump in prices as unexpected as it was claimed to have been. Data concerning new acreage planted had been available for several years to the management of rubber companies. It appeared certain that unless demand picked up substantially, production was increasing to such an extent that low prices would be inevitable. Furthermore, the corner had already been turned as far as prices were concerned, because two months before

12. Wallace and Edminster, p. 193.

13. Copeland, Melvin T., In 1925 the U.S. consumption of reclaimed rubber was 137,105 tons, 35.6% of the consumption of crude rubber.

production of 1,000,000 tons in 1955 to 1,200,000 tons in 1956, and the report is maintained under the industry's largest commercial company.

Investigation for the Stevenson Plan

It is very probable that the situation for the Stevenson Plan was somewhat negatively not so much on account of the alleged depressed condition of the rubber industry but rather because of the desire of the producers for quasi-monopolistic profits. Costs of production had been reduced as prices fell, and all companies were operating at a profit in 1955, and no losses occurred in 1956 as in 1951-52. Rubber was the same in volume as in 1951-52, but it was claimed to have been expected as it was claimed to have been. Their company has average prices and been available for several years to the management of rubber companies. It appeared certain that unless demand proved to be substantially, production was increasing to such an extent that low prices would be inevitable. Furthermore, the company had already been turned on for as prices were concerned, because the market before

12. Wallace and Robinson, p. 100.
13. Copeland, Nelson, p. 100. The U.S. consumption of natural rubber was 1,000,000 tons in 1955 and 1,200,000 tons in 1956.

the Act was passed they had begun an upswing.¹⁴

The precarious position that was alleged to exist can probably be traced to faulty financial management. Studies of 52 representative companies reveal that they earned an average of 25% on issued capital for fourteen years ending with 1922 and paid out in dividends an average of 22% in each of these years.¹⁵ This leaves only 4% yearly to take care of the expenses of expansion. Since most companies were expanding steadily, it is hard to see how these companies could have built up any surplus for emergencies. Hence, entirely through fault of their own, they were in no position to weather a period of low prices. Naturally, they were very anxious for the government to pass a law which would allow them to shift the burden of their mistakes onto consumers. The Act, as we have seen, was not solely responsible for the price rise, but they were perfectly willing that it should be.

Effect of Stevenson Act on world production.

The Stevenson Act stimulated world production to such an extent that the industry became permanently overexpanded. Prices of 10 to 12¢ per pound in London

14. Wallace and Edminster, p. 206.

15. Figart, D.M., U.S. Dept. of Commerce, "The Plantation Rubber Industry in the Middle East," Trade Promotion Series No. 2, 1925, p. 9.

the Act was passed they had begun an expansion. In
The procedure position that was alleged to

exist can probably be traced to 1931 financial
management. Studies of 32 representative companies
revealed that they earned an average of \$3.75 in 1931
capital for fourteen years ending with 1932 and held
out as dividends an average of \$2.11 in each of these
years. This leaves only \$1.64 yearly to take care of
the expenses of expansion. Since most companies were
expanding steadily, it is hard to see how these com-
panies could have built up any surplus for emergencies.
Hence, entirely through fault of their own, they were
in no position to meet at a period of low prices.
Naturally, they were very anxious for the government
to pass a law which would allow them to shift the
burden of their mistakes onto consumers. The Act,
as we have seen, was not really responsible for the
price rise, but they were perfectly willing that it
should be.

Effect of Stevenson Act on world production.

The Stevenson Act stimulated world production
to such an extent that the industry became seriously
overexpanded. Prices of 10 to 15% per pound in London

14. Wallace and Buchanan, p. 328.
15. Pigot, p. 11. U.S. Dept. of Commerce, "The
Plantation Rubber Industry in the British East."
Trade Promotion Series No. 2, 1929, p. 3.

or New York are said to be necessary to cover costs. Yet, since 1930, the price of rubber in New York has been less than 10¢ per pound, - and for several years was less than 5¢ per pound. The companies owning large estates kept up production because it was more economical in the long run than complete shut-down. They also were averse to discharging their large forces of trained men who had been imported at great expense from India and China.

16

Effects of Stevenson Plan on consumers.

The burden of that part of the rise in prices which can be ascribed to the Act was heavy on consumers especially those in the United States. This country consumes approximately 50% of the world's rubber production. Rubber growers blamed the 10¢ rise in price in 1923-24 over 1921-22 on the Stevenson plan. Thus purchasers in the United States paid in 1924 approximately \$140,000,000 more for the 1,400,000,000 pounds of rubber which they used than they would have paid without the Act. In 1925-26 years higher prices are estimated to have caused the burden to rise to \$400,000,000.

17

Intergovernment Rubber Agreement.

Even after the failure of the Stevenson Plan the British were persistent in their efforts to se-

16. Copeland, Melvin R. - pp. 26,27.

17. Wallace and Edminster - p. 213.

cure some measure of control over rubber production. They kept trying to persuade the Dutch to join them in a program of this sort, but the Dutch continually refused, saying they were unable to control native production. In 1932, after going off the gold standard, the British gave up agitation for a new restriction plan entirely and adopted the attitude that if anything was to be done, the Dutch would have to be the first to suggest it. Finally, in the spring of 1933 the Prime Minister of the Netherlands expressed the wish of the Dutch producers that some sort of an agreement be negotiated. Behind the willingness of the Dutch to cooperate now, was probably recognition of their immediate need for revenue, the current unprofitableness of rubber plantations, and their experiences in the control of sugar and tin. Therefore a committee of the Dutch International Association for Rubber Cultivation met on June 21, 1933 with representatives of British, French, and other producers in Middle Asian territory. It was not until the spring of 1934 that the producers came to an agreement which was signed by representatives of the governments of the United Kingdom, the Netherlands, France, India, with qualifications, and Siam. The purpose of the Intergovernment Agreement, as it was called, was stated to be: "regulate the production and export of rubber in and from producing countries

one some measure of control over the production.
They had tried to persuade the Dutch to join them in
a program of this sort, but the Dutch consistently re-
fused, saying they were unable to control rubber pro-
duction. In 1953, after losing all the other members,
the British gave up agitation for a new production
plan entirely and adopted the attitude that it was
better to be alone. The Dutch, however, have in the
first six months of 1954, in the spring of 1954 the
Prime Minister of the Netherlands expressed the wish of
the Dutch producers that some sort of an agreement be
negotiated, pending the willingness of the Dutch to
cooperate now, was probably recognized as being a
mediate need for revenue, the natural agricultural
area of rubber plantations, and their experience in
the control of sugar and tin. Therefore a committee
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territory. It was not until the spring of 1954 that
the producers came to an agreement which was signed by
representatives of the governments of the United Kingdom,
the Netherlands, France, India, with participation, and
also. The purpose of the International Association, as
it was called, was stated to be: "regulate the produc-
tion and export of rubber in and from producing countries

with the object of reducing world stocks to a normal figure, and adjusting in an orderly manner supply to demand, and maintaining a fair and equitable price level which will be remunerative to efficient producers."¹⁸

19

Provisions of the Intergovernment Agreement.

Under this agreement there was first set up an International Rubber Regulation Committee. This body was empowered to establish restriction percentages and do anything necessary to carry out the stated purpose of the Intergovernment Agreement. The following representation on the Committee was given to each country: four members and two substitute members from Malaya, three members and two substitute members from Netherlands India, one member and one substitute from Ceylon, from India and Burma together, one member and one substitute, and from North Borneo, Sarawak, and Siam one member and one substitute member each -- twelve members and nine substitute members in all. The representatives from each country must vote as a unit. One vote is granted for every complete 1,000 tons of the basic quota for that country.

Basic quotas were established for each country and the restriction percentages applied against them. A

18. Asia - June, 1935 - pp. 327-331 - "International Rubber Agreement", - Everett G. Holt and Warren S. Lockwood.

19. Asia - July, 1935 - "The Rubber Control Scheme at Work", - Holt and Lockwood - pp. 422-425.

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figure, and adjusting to an orderly manner supply to
demand, and maintaining a fair and equitable price for
the product which will be representative of the market price.

12

Provisions of the International Agreement

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an International Rubber Regulation Committee. This
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and to do anything necessary to carry out the stated
purpose of the International Agreement. The follow-
ing representation on the Committee was given to each
country: Four members and two substitute members from
Malaya, three members and two substitute members from
Netherlands India, one member and one substitute from
Ceylon, three members and two substitute members from
one substitute, and from each of Germany, Belgium, and
Spain one member and one substitute member each -- twelve
members and nine substitute members in all. The rep-
resentatives from each country had vote as a unit. The
vote is granted for every member 1,000 votes of the
basic quota for that country.

Basic quotas were established for each country and
the restriction percentages applied against them.

12. Asia - Japan, 1938 - 50,000-500 - International Rubber
Regulation Committee, - Agreement of 1938 and 1939. 12-1-38
12. Asia - 1938 - 100,000 - 100,000 - International Rubber
Regulation Committee - 12-1-38.

basic quota is the average yearly production of a country during the depression years preceding the Agreement. The plan is to last $4\frac{1}{2}$ years, hence quotas were set for the first and last years of the plan. The quotas in long tons for 1934 and 1938 are as follows: Malaya, 504,000 and 602,000; Netherlands India, 352,000 and 485,000; Ceylon, 77,500 and 82,500; India, 6,850 and 9,250; Burma, 5,150 and 9,250; North Borneo, 12,000 and 16,500; Sarawak, 24,000 and 32,000; Siam 40,000 both years.

Restriction percentages are the key devices which carry out the will of the Regulation Committee. They are uniformly applied to all producers unless otherwise stated. For the first ten months of the plan they were: June-July, 1934, 100%; August-September, 90%; October-November, 80%; December, 70%; January, February, March, 1935, 75%. Indo-China is given special treatment in that exports are not subject to restriction percentages unless they exceed 30,000. The reason for this is that as yet rubber cultivation in Indo-China is undeveloped and even with the encouragement of a subsidy from France, exports in 1933 were below 20,000 tons.

This covers the most important provisions of the agreement itself. The next phase of the problem to consider is that of apportioning the basic production

quotas to the producers in each region. The method of carrying this out is not set by the International Agreement but is determined according to the will of the individual governments participating. In Malaya and Netherlands India the allotment of shares of production involves an immense amount of work. It is helped, somewhat, by records concerning each producer kept in the offices of the government. Since native production plays such an important part in the total Netherlands India output, the basic quota of that country was split up between estate and native producers according to a constant percentage. Native production is limited to 71.5% of estate production throughout the $4\frac{1}{2}$ years of the plan. The natives undoubtedly could turn out more than this, but unless they are checked in this manner, their output might upset the whole scheme. The weapon used by the Dutch to enforce this percentage is an export tax in Sumatra and Borneo and a license in Java.

20

Operation of the Intergovernment Agreement.

Near the end of the first quarter of 1935, prices were still falling after a temporary high of 15.47¢ per pound in August, 1934. So in March, the Intergovernment Committee set the rate for April, May, and June at 70%, and the rate at 65% for the second half of the year. In New York the news of the lower

...to the ... in each ... the ...
 of carrying ... but is not ... the ...
 agreement ... is determined ... to the ...
 the individual ... participating ...
 and ... within the ...
 ... as ... of ...
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Cooperation of the International Agreement

... the end of the ... of ...
 prices were still ... a temporary ...
 13.5% per pound in August, 1934. ...
 International Committee set the rate for ...
 and June 1935, and the rate ...
 half of the year. In ... the ...

percentage caused the price of rubber futures to advance $1\frac{1}{4}\phi$ per pound. However, the price in April, after ten months operation of the plan, was lower than in April 1934. The influences behind this low price were probably the continued large supplies of rubber coming into consuming markets, the possibility of rubber strikes in factories in Akron, and the fluctuations of international exchange rates for the pound, the dollar, and the guilder.

Criticism of the plan.

Though its operation to date has not been encouraging, the plan should be considered from a long-time point of view before it can be condemned or praised. That it will remain in force for a lengthy period seems certain because the agreement provides for a conference under British leadership in 1938 to consider extension of the plan.

As things stand now, the plan offers very little uncertainty as to stable prices. Forces contributing to this uncertainty are the ignorance of what prices producers are expecting the agitation for new production quotas in the small countries, and the difficulty of limiting native production to the figure set. Furthermore, international exchange

percentage caused the price of rubber futures to advance 1 1/2 per cent. However, the price in April, after the normal contraction of the plant, was lower than in April 1934. The lathehouses behind this low price were probably the dominant large producers of rubber coming into consuming markets, the possibility of rubber strikes in factories in America, and the fluctuations of international exchange rates for the pound, the dollar, and the yen.

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As things stand now, the plan offers very little uncertainty as to stable prices. Factors contributing to this uncertainty are the ignorance of what prices producers are expecting the situation for new production closer to the small countries, and the difficulty of listing native production in the figure set. Furthermore, international exchange

rates are still in an unstable condition, an increased consumption of reclaimed rubber is taking place, and experiments for obtaining rubber from other plants, especially the wild guayule of Mexico, are being²¹ carried on more extensively. It has already been found possible to obtain 1500 pounds of rubber an acre once every three years from the guayule plant. (This equals the usual maximum possible production from an acre planted with *Hevea brasiliensis*). The expense of the complicated machinery necessary in²² its cultivation, however, is still very high.

The good features of the plan deserve mention. It covers a vastly larger area of world production acreage (over 90%) than its predecessor, the Stevenson Plan. It is much more flexible, since restriction percentages can be changed at a moments notice by the International Rubber Regulation Committee.

The problem of overproduction is essentially a battle between the large estate owners on one hand who lean towards controlled production and the small

21. Asia, July, 1935, pp. 422-427.

22. Saturday Evening Post, May 2, 1931, p. 110.

"Taming the Wild Guayule", Samuel G. Blythe.

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 mittee.

The problem of overproduction is essentially
 a battle between the large estate owners on one hand
 and the small estate owners on the other.

31. Asia, July, 1935, pp. 423-427.
 32. Saturday Evening Post, May 3, 1931, p. 119.
 "Taming the Wild Guayule", Samuel C. Byrd.

holders and native producers on the other, who strive for increased production.²³ According to Messrs. Holt and Lockwood, the rubber industry itself is skeptical concerning the ultimate benefits of restriction and looks for the way out in another direction.

"Whatever opposing rubber interests may think of restriction they are agreed that the future prosperity of the industry depends on discovering or creating new uses for rubber."²⁴ If this is a correct expression of the attitude of rubber producers, the most that can be expected from the new plan is stabilization of the price level rather than creation of profits.

The production of rubber is carried on in so many countries that it is impossible to recommend acreage reduction as a plan for the rubber industry, such as I have suggested for the coffee industry. Overproduction of coffee is a Brazilian problem rather than a world problem. Furthermore, the difficulties of enforcing such a program among a large number of highly individualistic native producers are so great as to seriously endanger its chances of success from the very beginning.

23. Copeland, Melvin T., Raw Material Prices and Business Conditions, p. 27.

24. Asia, July, 1935, p. 427.

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23. Copeland, *Latex*, p. 100. New Natural Prices and
 Business Conditions, p. 27.
 24. *Ibid.*, July, 1933, p. 427.

PART IV

THE TIN PRODUCTION INDUSTRY

Distribution of tin resources.

Tin is found in only limited areas of the globe. The principal producing countries are Malaya, Dutch East Indies, lower Burma, Siam. China, Nigeria, and Bolivia. These countries supply over 95% of the world's output. Regions of minor importance are the Belgian Congo, Cornwall, Spain, Portugal, and Australia. Recently, a good deal of work has been done by British, Belgian and Dutch companies in exploring the region west and southwest of Lake Victoria by British, Belgian, and Dutch companies. Tin ore has been found in Nyasaland, Portuguese East Africa, Rhodesia, Natal, Swaziland, and the Cape Colony.¹ These regions, however, are of no commercial importance. The table on page 63 covers world production from 1927-31.

1. Index, August, 1932, "The World's Staples. XV. Tin," P. Hovig Svenska Handelsbanken, p. 236.

PART IV

THE TIN INDUSTRY

Distribution of tin resources.

Tin is found in only limited areas of the globe. The principal producing countries are Malaya, Dutch East Indies, Java, Burma, China, Siam, Siam, and Bolivia. These countries supply over 90% of the world's output. Regions of minor importance are the Belgian Congo, Cornwall, Spain, Portugal, and Australia. Recently, a good deal of work has been done in Bolivia, Belgian and Dutch companies are exploring the region west and southwest of Lake Victoria by British, Belgian, and Dutch companies. Tin has been found in Kazakhstan, Portuguese East Africa, Rhodesia, Natal, Swaziland, and the Cape Colony. These regions, however, are of no commercial importance. The table on page 23 covers world production from 1927-31.

2
Mine Production of Tin

(in thousands of long tons)

	1927	1928	1929	1930	1931
Europe	4.0	3.6	4.1	3.1	1.7
Malay States	54.3	64.5	69.4	64.0	52.6
Dutch East Indies	33.4	34.9	35.7	34.3	28.0
Siam	7.5	7.6	10.5	11.5	12.4
Burma	2.4	1.8	2.7	3.0	2.0
China	6.2	6.8	6.8	6.5	6.6
Elsewhere in Asia	.6	1.8	.9	1.3	1.8
Nigeria	8.0	9.1	10.7	8.8	7.3
Elsewhere in Africa	2.7	2.7	2.5	2.2	2.0
Bolivia	35.8	41.4	46.3	37.0	28.8
Australia	3.1	2.9	2.2	1.5	1.0
WORLD TOTAL	158.0	177.1	191.8	172.7	144.2

2. Index, August, 1932, p. 236.

(in thousands of long tons)

	1957	1958	1959	1960	1961
Europe	4.0	3.8	4.1	3.1	1.7
Malay States	34.3	34.3	33.4	34.0	33.8
Dutch East Indies	35.4	34.9	35.7	34.3	33.0
Siam	7.8	7.6	10.3	11.3	13.4
Burma	3.4	1.8	3.7	3.0	3.3
China	3.3	3.3	3.3	3.3	3.3
Elsewhere in Asia	.8	1.3	.3	1.3	1.3
Nigeria	3.0	3.1	10.7	3.3	7.3
Elsewhere in Africa	3.7	3.7	3.3	3.3	3.0
Bolivia	33.3	41.4	43.3	37.0	33.3
Australia	3.1	3.3	3.3	1.3	1.0
WORLD TOTAL	138.3	177.1	181.8	173.7	144.3

Sources of capital invested.³

Before 1900 most all tin mines on the Malay Peninsula and in the Dutch East Indies were owned or rented by Chinese. The British began to invest their capital only hesitatingly. But now it is estimated that British investments are sunk in at least 50% of the World's productive tin capacity under normal conditions. The table on page 63 shows that in 1929, 90,000 tons of tin out of a world total of 190,000 tons came from countries in the British Empire. Also most of Siam's output is controlled by British capital. Other countries of major importance are the Dutch East Indies with 20% of world output, and Bolivia with 24%.

The tin ore of Nigeria and a large part of that from Bolivia is handled by smelters in Great Britain. These smelters are owned by the Williams, Harvey and Co., and the Penpoll Tin Smelting Co., both of Booth near Liverpool, and the Cornish Tin Smelting Co. of Cornwall. The capital in these companies is furnished for the most part by Englishmen.

The mines at Banka are owned and operated by the Dutch government. The government employs trained

3. Ibid., pp. 238, 239.

Before 1800 most all business on the Malay Peninsula and in the Dutch East Indies were owned or controlled by British. The British began to invest their capital only recently. But now it is estimated that British investments are worth at least 50% of the world's production in capacity under normal conditions. The table on page 55 shows that in 1929, 55,000 tons of tin out of a world total of 160,000 tons came from countries in the British Empire. Also most of Asia's output is controlled by British capital. Other countries of major importance are the Dutch East Indies with 25% of world output, and Bolivia with 15%. The tin ore of Nigeria and a large part of that from Bolivia is handled by companies in Great Britain. These companies are owned by the Williams, Harvey and Co., and the Penang Tin Smelting Co., both of which have headquarters in the Straits Settlements, at Singapore. The capital in these companies is furnished for the most part by Singapore. The mines of Borneo are owned and operated by the Dutch Government. The Government employs trained

engineers to supervise the work. The island of Billiton nearby is owned by a Dutch company called Billiton Maatschappij. This company and the Dutch government dominate tin production in the Dutch East Indies. British capital entered Malayan tin mining in 1877 when the Straits Trading Co. was established near Singapore. By 1912 the output of European-owned mines had reached 26% of the total Malayan production. It increased to 32% in 1918 and to 65% in 1931. In Siam early capital came from two British companies and one Dutch company. In Nigeria, also, most of the mines are British owned.

Tin Smelting.

Small scale tin smelting was the rule before the beginning of the twentieth century. Tin ore, being a pure oxide may be reduced to practically the pure metal by merely smelting one ore in most any kind of a furnace. Today, however, the smelting is carried on generally on a much larger scale.⁴ The plants of the Straits Trading Co. at Singapore and Penang and of the Eastern Smelting Co. at Penang take care of the smelting

4. Ibid., p. 238.

engineers to supervise the work. The island of
 Hillion nearly is owned by a Dutch company called
 Hillion Maatschappij. This company and the Dutch
 government dominate the production in the Dutch
 East Indies. British capital entered Malayan tin
 mining in 1877 when the Straits Trading Co. was
 established near Singapore. By 1912 the output of
 European-owned mines had reached 30% of the total
 Malayan production. It increased to 52% in 1918
 and to 65% in 1931. In 1931 nearly 50% of the
 tin from two British companies and one Dutch company
 in Nigeria, also, most of the mines are British owned.

Tin Smelting.

Small scale tin smelting was the rule before
 the beginning of the twentieth century. Tin ore, being
 a pure oxide may be reduced to practically the pure
 metal by merely smelting one ore in one kind of a
 furnace. Today, however, the smelting is carried on
 generally on a much larger scale. The plants of the
 Straits Trading Co. at Singapore and London and of the
 Eastern Smelting Co. at London take care of the smelting

requirements of Ores from China, Australia, South Africa, Nigeria, and the mines of Burma, Siam, and the Federate Malay States. Bolivia ore also smelted in the Straits.⁵ According to modern technique the plants use coal as both fuel and reducing agent in their furnaces. The output is tin of great purity and it is known as "Straits Tin."

Banka tin comes from Banka in the Dutch East Indies. In the smelting process an improved version of the Chinese shaft furnace is employed, in which the ore is reduced by means of charcoal. Banka tin is the purest in the world.

Course of prices and production.

Before 1916 the price of tin did not show fluctuations anywhere nearly as violent as during and after the war.⁶ In 1916 the price passed its previous high and mounted to a peak of almost £400 per long ton, which, after a sudden drop in 1918, it equalled again in early 1919. To be sure the price always shows marked short-time changes but these are to be expected

5. Spurr and Wormser, Marketing of Metals and Minerals
6. Ibid., p. 186, Table of yearly average tin prices since 1895.

requirements of iron from China, Australia, South
 Africa, Hungary, and the mines of Burma, Java, and
 the Federated Malay States. Malaya also supplied
 in the 1920's. According to modern technique the
 plants are used as both fuel and reducing agent in
 their furnaces. The output is 100,000 tons yearly
 and it is known as "Chinese tin".
 Before 1910 tin was a by-product in the smelting
 of iron. In the smelting process an improved
 version of the Chinese blast furnace is employed, in
 which the ore is reduced by means of charcoal. Before
 tin is the product in the world.

Course of prices and production.

Before 1910 the price of tin did not show
 fluctuations anywhere nearly as violent as during and
 after the war.⁶ In 1910 the price reached its highest
 high and mounted to a peak of almost 100 per ton, but
 which, after a sudden drop in 1912, it equalled again
 in early 1913. To be sure the price almost always
 marked short-time changes but there are to be expected

6. Spurr and Hays, *Geology of Malaya and the Straits*
 1912, p. 180. Table of yearly average tin prices
 since 1898.

because of the inelasticity of demand for tin. Increases or decreases in the price of tin have little effect on purchasing because the cost of tin is such a small fraction of the cost of the finished product made from it.⁷ Hence, when supply exceeds demand, a sudden drop in price occurs, because buyers seldom more than enough for their immediate requirements due to the expense of tying up capital in so valuable a commodity. Also, when there is a tin shortage, the price shoots up, since consumers must have the tin at any price. In 1921 and 1922 the price dropped to £150 per ton,--almost the pre-war low. (In this study prices are quoted in pounds sterling per long ton rather than in dollars because world prices are set in London.) Prices then began to rise in 1922, as world consumption increased more rapidly than world production. They kept rising to a peak of over £300 per ton in early 1927. In $4\frac{1}{2}$ years this represents a rise of 100%. After that, however, the price began to slide and continued to do so for $5\frac{1}{2}$ years until it nearly touched £100 in April, 1932.⁸

7. Index, August, 1932, p. 245.

8. Copeland, Melvin T., Raw Material Prices and Business Conditions, p. 12.

because of the possibility of demand for it. In-
crease of demand is the price of the new machine
effect on production because the cost of the machine is high
a small fraction of the cost of the finished product.
made from it. Hence, when supply exceeds demand, a
margin arises in price. However, because buyers seldom
pay their money for their immediate requirements
due to the expense of buying, it is not possible
to conclude. Also, when there is a rise in price, the
price which is, since it is not possible to have the rise of
any price. In 1921 and 1922 the price dropped to
2500 per ton,--almost the pre-war level. In 1923
steady prices are quoted in pounds sterling but the
ton rather than in dollars because world prices are
not in London. Prices then began to rise in 1924,
as world consumption increased and regular ton
world production. They kept rising to a peak of over
4500 per ton in early 1927. In 1928 this movement
a rise of 1927. After that, however, the price began
to slide and continued to do so for 3 years until it
nearly touched 1900 in April, 1931.⁶

7. Index, Annual, 1931, p. 100.
8. Copeland, *ibid.*, p. 100, has indicated prices and quantities
conditions, p. 10.

The jump in during 1922-26 caused production to increase and continue its increase after the price had started to fall early in 1927. Accordingly, stocks began to pile up in the United States, in Europe, and in transit to the extent of 13,300 tons in 1926. For almost two years the visible supply wavered between 13,300 and 16,200 tons. In the middle of 1928, they topped 18,000 tons, mounted to 26,600 tons in March 1929. This date marks the beginning of the period of serious difficulties for the tin industry. By the end of 1929 stocks had reacted to the extent of 28,100 tons, then climbed to 51,700 tons in July 1931.⁹

Private attempts to limit output.

This was the state of affairs when the International Tin Committee was organized in 1931. But let us first consider private attempts at limiting output of tin. In July, 1929 a meeting was held in London of officers of 167 tin mining companies representing about 50% of the world's production. Out of this conference came the Tin Producers' Association, Inc., with the avowed purpose of settling all problems facing the members of the association. A program of

9. Ibid., p. 12.

The jump in output 1952-53 caused a reaction to increase and continue the increase after the year had started to fall early in 1953. Accordingly, plans began to pile up in the United States, in Europe, and in Canada to the extent of 11,000 tons in 1953. For almost two years the visible supply averaged between 11,500 and 12,000 tons. In the middle of 1953, they topped 12,000 tons, mounted to 20,000 tons in March 1953. This date marks the beginning of the period of various difficulties for the tin industry. By the end of 1953 stocks had reached to the extent of 22,100 tons, then climbed to 31,700 tons in July 1951.

Private attempts to limit output.

This was the state of affairs when the International Tin Committee was organized in 1951. But let us first consider private attempts at limiting output of tin. In July, 1952 a meeting was held in London of officers of 167 tin mining companies representing about 80% of the world's production. Out of this conference came the 'Tin Producers' Association, Inc., with the avowed purpose of settling all problems facing the members of the association. A program of

voluntary restriction by the members was outlined. This was loyally carried out by certain companies, but the failure to cooperate by other members of the association, as well as the fact that the total productive capacity of the association was only half of world capacity caused the plan to be given up.

The Tin Restriction Scheme.

The plan of private producers was soon replaced by one officially known as the "Quota Scheme",¹⁰ but commonly referred to as the International Tin Restriction Plan. According to this agreement the government of Dutch East Indies, Nigeria, the Federated Malay States, and Bolivia placed their representatives on a committee called the International Tin Committee. The reason these four governments were anxious to put through a restriction program was that public revenues in the tin-producing countries are largely dependent on the profitableness and steadiness of tin sales.¹¹ Consequently it would be easier to balance their budgets if tin prices were stable rather than fluctuating and on a reasonable high level. The purpose of the scheme was stated to be "to secure a fair and reasonable

10. Index, August, 1932, p. 249.

11. Copeland, Melvin T., p. 12.

voluntary restriction by the members was not
 This was largely carried out by certain companies,
 but the failure to cooperate by other members of the
 association, as well as the fact that the total pro-
 ductive capacity of the association was only half of
 world capacity caused the plan to be given up.

The Hamilton Scheme

The plan of private production was soon
 replaced by one officially known as the "New Scheme",¹⁰
 but commonly referred to as the International Tin Re-
 striction Plan. According to this agreement the govern-
 ment of each East Indian, African, and Latin American
 State, and Bolivia placed their representatives on a
 committee called the International Tin Committee. The
 members of these four governments were anxious to put
 through a restriction program and that public revenues
 in the tin-producing countries are largely dependent on
 the profitability and steadiness of the tin market.¹¹ Con-
 sequently it would be easier to balance their budgets
 if tin prices were stable rather than fluctuating and
 on a reasonably high level. The purpose of the scheme
 was stated to be "to secure a fair and reasonable

10. Index, August, 1933, p. 249.
 11. Ibid., p. 11.

equilibrium between production and consumption with the view of preventing repeated and severe oscillations of the prices"¹² This may be safely assumed to mean profitable prices to all concerned.

Under the original agreement the allotted world production of 145,000 tons was shared as follows: Malaya, 53,925 tons; Bolivia, 34,260 tons; Dutch East Indies, 29,910 tons; and Nigeria, 7,750. The quota may be changed by unanimous vote of the four countries, but the ratio of each country's output to the total must remain the same. The plan went into effect March 1, 1931. In September Siam came in. This brought the percentage of world output controlled by the members up to 95.¹³

Each government is responsible for regulating production and export in its country within the allotted quota. The participating governments are allowed to choose their own method of distributing the allotted quota among the companies in their country. The following procedure is used in the Malay States: "Certificates allocating permissible production are issued only for the quota periods and are granted only to owners of land already mined or prepared for mining . . . Penalties for non-observance of regulations range from the cancellation

12. Index, August, 1932, p. 249.

13. Ibid., p. 249.

agreement between producers and consumers with the
 view of preventing excessive and heavy fluctuations of
 the prices. It is this way he is to be assumed to own
 profitable prices to all concerned.

Under the original agreement the allied
 world production of 150,000 tons was shared as follows:
 Malaya, 25,000 tons; Bolivia, 25,000 tons; Dutch East
 Indies, 25,000 tons; and Nigeria, 7,500. The price was
 to be shared by a committee of the four countries, but
 the ratio of each country's output to the total was
 to remain the same. The plan was to effect March 1, 1931.
 In September 1930 came in. This brought the percentage
 of world output controlled by the powers up to 25.15.
 Each government is responsible for regulating
 production and export in its country within the allied
 quota. The participating governments are allowed to
 choose their own method of distributing the allied
 quota among the countries in their country. The 1931-
 1932 quota is used in the 1931-1932 quota. "Certification
 allocating percentage production are based only for the
 quota periods and are granted only to export of 1931-1932
 ready when or prepared for when. The 1931-1932
 non-observance of regulations means from the cancellation

of licenses and confiscations to fines of \$2,000. Deliberate evasions are subject to fines of twenty times the value involved or a flat penalty of \$5,000."¹⁴

Further provisions of the plan pertain to the organization of an International Tin Pool, in which is placed tin bought from producers and in the open market. This pool represents an attempt to unload excess stocks onto the market with the least amount of friction. The pool began its operations in August 1931 when it was discovered that the Federated Malay States had mined 4800 tons of tin more than they were allowed. The holdings of the pool, which were 21,000 tons on January 1, 1932, are placed on the market in amounts which vary with market prices. 5% of the stocks held are released if the price averages L165 for one month. The timing of these sales and the prices at which they are made cannot be altered except by consent of every government party to the agreement.¹⁵

Another pool was set up in 1934 known as the Buffer Stock Pool. It is controlled by the International Tin Committee and its function is to keep a supply of tin in reserve to be released for sale if any temporary shortage occurs. The International Tin

14. Harvard Business Review, October, 1932, C.L. James, "International Control of Tin Ore", p. 71.
15. Index, August, 1932.

Committee watches world consumption and production continually and sends out advice periodically concerning changes in quotas.¹⁶

Operation of the Tin Quota Scheme.

For the first half of 1932 world stocks remained fairly steady at between 60,000 and 62,000 tons after rising to 63,124 tons in August 1931. Two curtailments of quotas, one of 20,000 tons in May 1931 and another of 15,000 tons in November succeeded in lowering world production to 110,000 tons. This levelling off of world stocks demonstrates the administrative efficiency of the plan and its speed in reacting to changes in demand. The price of tin, however, has continued to fall.

In 1932 the International Tin Committee voted a further restriction of production designed to bring world stocks down to a reasonable amount. In June this resolution was made even more drastic by the decision to discontinue exports completely during July and August and release the amount held back in equal amounts during the next ten months.¹⁷

After these new restrictions were imposed,

-
16. Commerce and Finance - March 6, 1935. "The International Tin Pool" - p. 201.
17. Index - Aug. 1932 - pp. 250-252.

Committee watched world consumption and production
continually and made out saving periodically reports
is
ing changes in prices.

Operation of the Tin Trade Board

For the first half of 1932 world stocks
remained fairly steady at between 60,000 and 62,000
tons after rising to 62,134 tons in August 1931. Two
crucial moments of prices, one of 30,000 tons in May
1931 and another of 15,000 tons in November followed.
ed in lowering world production to 110,000 tons. This
leveling off of world stocks demonstrates the ad-
ministrative efficiency of the plan and the speed in
reacting to changes in demand. The price of tin, how-
ever, has continued to fall.

In 1933 the International Tin Committee
voted a further restriction of production designed
to bring world stocks down to a reasonable amount.
In June this resolution was made even more drastic
by the decision to allocate exports absolutely
during July and August and release the amount held
back in special accounts during the next ten months.
After these new restrictions were imposed,

-
16. Committee and Finance - March 8, 1933. "The Inter-
national Tin Pool" - p. 301.
17. Index - Aug. 1933 - pp. 300-301.

the price began a steady rise in the summer of 1932. Contributing to this rise was a pick-up in industrial activity all over the world. Under the impulse of this force and restriction the price reached £228 by the end of 1933. (It is estimated that most producers could make a profit if tin were selling at £100 a ton.¹⁸) During 1934 the price stayed between £227 and £239 a ton. During the early part of 1935, however, the price fell to £214 and at the present writing it is £213 (about 48¢ per pound in New York). Thus, the plan is apparently working successfully¹⁹ and making money for producers.¹⁹

Criticism of the Tin Quota Scheme.

The main criticism of the plan is that it treats both high and low-cost producers alike. The low-cost producers will soon see that they can increase sales and hence make more money by selling at lower prices. It will be difficult to satisfy the demands of this group for increases in quotas.²⁰

Another criticism of the plan is that it arouses consumer hostility because of its maintenance of an excessively high price. Consumers include industrialists such as

18. Business Week--May 19, 1934--"Breakers Ahead for Tin".

19. Commerce and Finance--Mar. 6, 1935. p. 201.

20. Ibid--p. 201

automobile producers and tin-plate manufacturers. Their reaction may follow several courses. They may adopt substitutes such as lacquers and aluminum to replace the tin lining in cans, paper cartons processed against water, rustless iron and steel containers, or containers of glass and cellophane. Another course is the use of tin recovered from old tin cans and scrap. This industry is already flourishing in Japan and the United States. The output in 1933 was higher than in any year since 1929 and was equally high in 1934. A third alternative, and admittedly a last resort, is a complete cessation of buying, in short, a boycott.

On the side of supply, an influence which will lessen the effectiveness of the plan is increased production by the non-participating countries. Since the members of the plan control 95% of world output, and since tin ore occurs in only limited areas of the globe, this possibility is not of immediate concern, although it will be of more importance if tin is discovered in Central and South Africa.

PART V

Summary and Conclusion

Summary:

Although the mechanism for accomplishing the purposes of the rubber, coffee, and tin restriction plans have varied in minor details, the main-spring of all three plans is the same---the restraint of a normal supply of a commodity from coming to market. Although no direct mention is made of price-fixing in the tin and coffee plans, there was a definite price objective in the Stevenson Plan. ¹ Whether stated or not, the purpose of these restrictive measures was to raise prices so that even the high cost producers could sell at a slight margin of profit. That prices did rise when coffee valorization began, at the inception of the Stevenson plan, and after the formation of the International Tin Committee is shown by record of the facts. In all these schemes, it must be remembered that it was not they alone that were responsible for the price rise. The weather and a timely increase in industrial activity can be credited with an~~e~~ equal or greater share in the response

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1. Pivotal prices were 1 s.(23¢) and 1 s. 3d(29¢). These prices were adopted on the grounds that they allowed rubber growers a "fair" return on their investment.

of prices.

An examination of the three plans now in operation reveals that their prospects of permanent success are small. Although working successfully now, the tin plan faces a reaction by industrialists in the direction of reclaimed tin and substitutes. Both tin and rubber are threatened with serious problems in the internal operation of their control plans raised by low-cost producers. Coffee, which is valorization rather than actual restriction, shows promise of continuing the record of chronic successes that has been its history, but this will be achieved only by exploiting its quasi-monopolistic position and thrusting a heavy burden on consumers. This position is yearly being rendered less secure by producers in other countries and it is only a question of time before coffee overproduction will become a world problem rather than a Brazilian one.

Conclusion:

It is now time to bring together the arguments against restriction which have slowly been accumulating by statement and implication in this study. They may be divided into two groups:

(1) those demonstrating the inefficacy of restriction plans as devices to rid society of useless productive capacity, and

(2) those that illustrate the obstacles impeding the successful operation of control measures, from a business point of view.

I think it is fair to say that these three restriction schemes have thus far completely failed to remove from their respective industries the unnecessary capital employed therein. To support this conclusion it is only necessary to cite the pages of statistics telling the story of the continued piling up of world stocks of rubber, coffee, and tin in spite of the Stevenson Plan, the numerous coffee valorization measures, and the International Tin Quota Scheme. It is hard to see how the tin plan as well as the others can do anything different but keep the existing superfluous producers in operation. That there is surplus capacity in the tin mining industry, as certainly as in the other two industries, is shown by the fact that for six years preceding the adoption of the restriction plan, this surplus capacity was

Conclusion:

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being reflected in an accumulation of world stocks.²

In line with my second conclusion, it is equally true that, as purely profit-making instruments invented by business men to insure permanent profits, control schemes are faulty in the following respects:

- (1) Consumers will inevitably resort to substitutes or reclaimed materials to replace commodities whose prices are fixed too high.
- (2) The difficulties of combining all producers under one agreement are great. The unrestricted producers may defeat the plan to hold up prices.
- (3) There is a certain amount of inflexibility in any agreement to control production. Due to the time required for statistics to be collected and for committees to act, production quotas are not always changed with the speed necessary to take advantage of increases or decreases in demand.
- (4) New producers are attracted into the industry when prices rise above a certain point.
- (5) There is a strong temptation among participants in the agreement. to violate the regulations directly and exceed the production quota.

2. Index--Aug. 1932--table on p. 247

being collected in an accumulation of small amounts.
It is in fact an exact duplication of the
equally true fact, as regards the distribution of
goods, that the business of the future depends
on the control of the goods and the control of the
profits, and the control of the goods and the control of the
profits.

(1) The business of the future depends on the control of the
goods and the control of the profits, and the control of the
goods and the control of the profits.

(2) The business of the future depends on the control of the
goods and the control of the profits, and the control of the
goods and the control of the profits.

(3) There is a certain amount of control of the goods and the
control of the profits, and the control of the goods and the
control of the profits.

(4) The business of the future depends on the control of the
goods and the control of the profits, and the control of the
goods and the control of the profits.

(5) The business of the future depends on the control of the
goods and the control of the profits, and the control of the
goods and the control of the profits.

(6) There is a certain amount of control of the goods and the
control of the profits, and the control of the goods and the
control of the profits.

(7) The business of the future depends on the control of the
goods and the control of the profits, and the control of the
goods and the control of the profits.

Such is the history of coffee, rubber, and tin. I add it to the constantly increasing volume of literature written in protest against these measures restraining world trade in commodities. I hope I may not seem unduly pessimistic when I say that the chief lesson history teaches us is that men seldom profit by the examples of history.

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27; June 3, 10; Aug. 26; Oct. 29; Nov. 25;
Dec. 9, 16, 30

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Aug. 3; Nov. 23

1933--Nov. 11

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